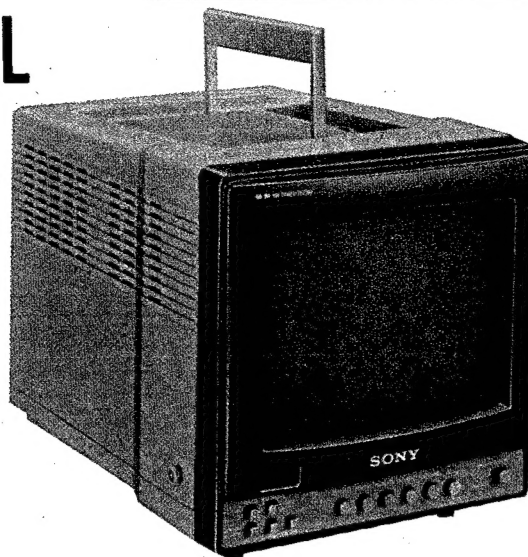


PVM-9020ME

SERVICE MANUAL

AEP Model

Chassis No. SCC-640A-A



May, 1985

SPECIFICATIONS

| | |
|--------------------------|---|
| Color system | PAL and SECAM systems, switched automatically |
| Picture tube | Microblack Trinitron tube Approx. 195 mm (9 inches) (Approx. 221 mm picture measured diagonally) 70-degree deflection |
| Resolution | 230 TV lines (B/W) |
| Color temperature | 9300° K |
| Frequency response | 4 MHz (-3 dB) |
| Horizontal linearity | ± 8 % |
| Vertical linearity | ± 8 % |
| Line pull range | Horizontal ± 500 Hz Vertical 8 Hz |
| Overscan of the picture | 6 % |
| Underscan of the picture | 5 % |
| H/V delay | Horizontal: Approx. 1/4 line Vertical: Approx. 1/2 line |
| Return loss | 5 MHz, -30 dB (INPUT A, INPUT B) |
| Zooming | Within 3 % |
| Convergence | Central area 0.5 mm Periphery 0.7 mm |
| Brightness | More than 50 foot-lamberts |

| | |
|-----------------|---|
| Inputs | VIDEO IN (INPUT A): BNC connector VIDEO (INPUT B): BNC connector Composite 1 V p-p ±6 dB, 75 ohms, unbalanced, sync negative AUDIO IN (INPUT A): minijack AUDIO (INPUT B): minijack -5 dBs, 47 kohms or more |
| Outputs | VIDEO OUT (INPUT A): BNC connector VIDEO (INPUT B): BNC connector 1 V p-p, 75 ohms, unbalanced, sync negative AUDIO OUT (INPUT A): minijack AUDIO (INPUT B): minijack Output level 0.8 W |
| TUNER connector | 6-pin DIN connector Pin No. 1: not in use Pin No. 2: video input, composite 1 V p-p ±6 dB, 75 ohms, unbalanced, sync negative Pin No. 3: ground Pin No. 4: audio input, -5 dBs, 47 kohms or more Pin No. 5: power output Pin No. 6: not in use |

— Continued on next page —



TRINITRON®
COLOR VIDEO MONITOR
SONY®

PVM-9020ME

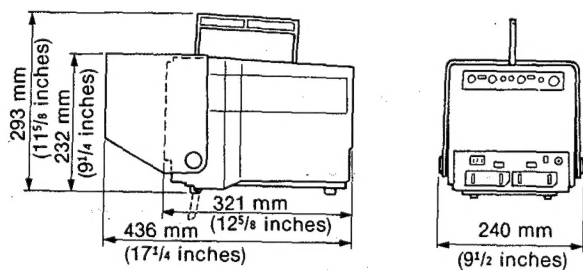
Power requirements

220/240 V ac, 50/60 Hz
12 V dc, with the optional Sony NP-1
battery pack or 12 V car battery
using the optional DCC-16AE car
battery cord

Power consumption

48 W ac
40 W dc

Dimensions



Weight Approx. 7.2 kg (15 lb 14 oz)
 not incl. accessories

Accessories supplied
AC power cord (1)
Hood (1)

While the information given is true at the time of printing, small production changes in the course of our company's policy of improvement through research and design might not necessarily be indicated in the specifications. We would ask you to check with your appointed Sony dealer if clarification on any point is required.

OPTIONAL ACCESSORIES

TV tuner unit TU-1110E/UB
Battery pack NP-1
Car battery cord DCC-16AE

Your dealer may not handle some of the above listed optional accessories. Please ask the dealer for detailed information about the optional accessories available in your country.

SAFETY-RELATED COMPONENT WARNING !!


COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

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SECTION 1 OUTLINE

1-1. FEATURES

Microblack™ Trinitron® picture tube

The Microblack Trinitron picture tube gives a high resolution, high contrast picture.

PAL/SECAM broadcasting standard receivable

The monitor can receive PAL and SECAM signals. The appropriate broadcasting standard is selected automatically.

Push-to-lock controls

In the locked position, the controls are protected from damage during carriage of the unit. The protruding position allows easier operation.

Monitor of sync signals

The HV-DELAY switch allows horizontal and vertical sync signals to be displayed on the screen.

Blue only picture

By using the B-ONLY switch, the picture can be displayed in blue and black only, facilitating hue adjustment or observation of VTR noise.

Underscan mode

The signal normally scanned outside of the screen can be monitored in underscan mode.

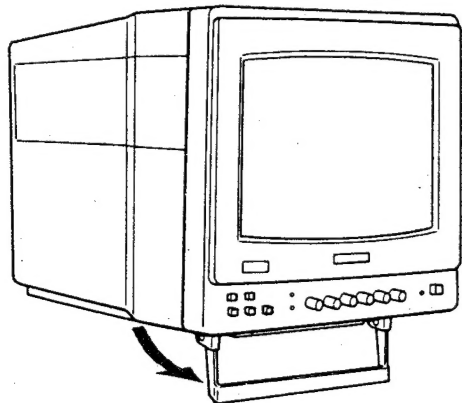
6-pin DIN tuner connector

The TUNER connector allows easy connection of a TV tuner, which is equipped with the 6-pin DIN connector, using a single cable.

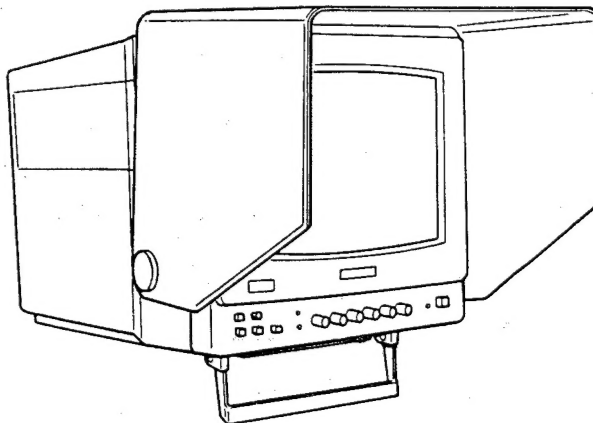
Three power sources

The monitor can operate on either house current, a rechargeable battery or a 12 V car battery, allowing use indoors or outdoors. The battery charge function is incorporated.

Use on the stand

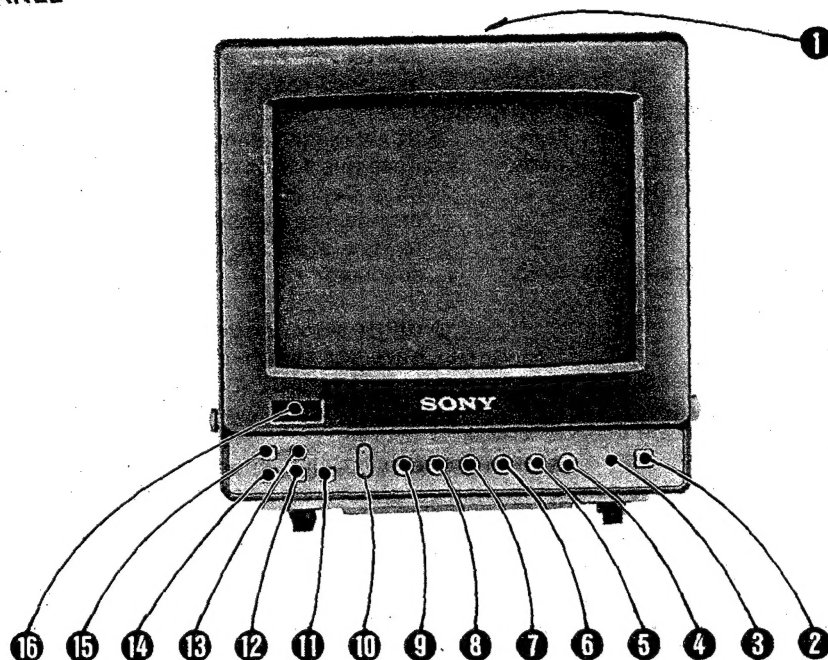


Attaching the supplied hood

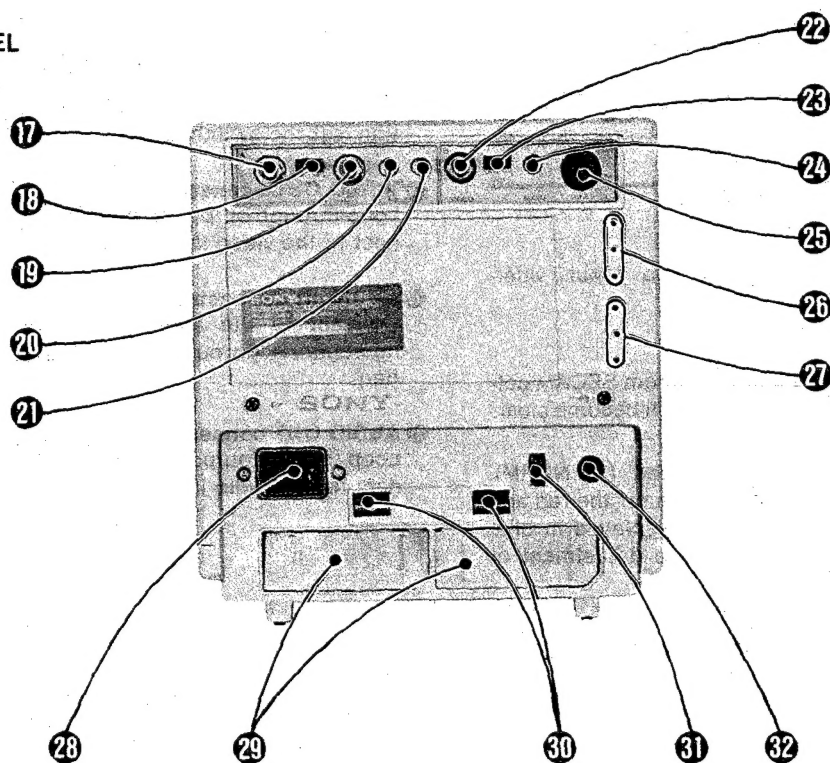


1-2. LOCATION AND FUNCTION OF CONTROLS

FRONT PANEL



REAR PANEL



1 Carrying handle

2 POWER switch

To turn the monitor on, depress the POWER switch (ON). To turn it off, press the switch again (OFF).

3 BATT (power/battery) indicator

This indicator lights when the power is turned on. When the rechargeable battery becomes weak, the indicator flashes for about five minutes. Then it goes out, and the power is automatically turned off.

4 VOL (volume) control

Turn this control clockwise or counterclockwise to obtain the desired volume.

5 PICTURE control

Adjusts the contrast, intensity and brightness simultaneously in the proper ratio.

6 BRIGHT (brightness) control

Adjusts the brightness. Normally set this control at the center detent position.

7 COLOR control

Adjusts the color intensity of the picture. Clockwise rotation makes the picture more vivid; counterclockwise rotation makes it paler.

8 SHARP (sharpness) control

Adjusts the sharpness of the picture. Clockwise rotation makes the picture sharper; counterclockwise rotation makes it softer.

9 V HOLD (vertical hold) control

If the picture rolls vertically, correct it with this control.

Before turning one of the controls 4 to 9 for easier operation press on it to release the control to a protruding position.

10 Color system indicators

Indicate the color system of the input video signal: PAL or SECAM.

11 SECAM switch

Depress this switch when a picture from SECAM color sources is distorted. The picture will become clear.

12 B-ONLY (blue only) switch

Normally keep this switch released (NORM). Depress the switch (BLUE) to turn off the red and green beams. The picture will be displayed in blue and black only. This facilitates hue adjustment or observation of VTR noise.

13 HV-DELAY switch

Normally keep this switch released (NORM). To monitor the sync signals, depress the switch (H/V). The picture is shifted horizontally and vertically. The horizontal sync is displayed in left approximately one quarter of the screen and the vertical sync is displayed near the center of the screen.

14 SCAN mode select switch

Keep this switch released (NORM) for normal scanning. Depress the switch (UNDER) to reduce the display size by about 5 % (underscanning mode) and to view a picture which does not appear in normal scanning.

15 INPUT select switch

Keep this switch released (A) to monitor the signal from the INPUT A connectors. Depress the switch (B) to monitor the signal from the INPUT B connectors.

16 CHARGE indicator

Lights during charging. When charging is complete, the indicator goes out.

INPUT A (17 - 21)

To monitor the input signals connected to these connectors, keep the INPUT select switch released (A).

17 VIDEO IN connector (BNC type)

Connect to the video output of video equipment, such as a VTR or a color video camera.

18 75 Ω termination switch

When only the VIDEO IN connector is used (the VIDEO OUT connector is not used), set this switch to ON. When both the VIDEO IN and VIDEO OUT connectors are used together for a loop-through connection, set the switch to OFF.

19 VIDEO OUT connector (BNC type)

Loop-through output of the VIDEO IN connector. Connect to the video input of a VTR or another monitor.

20 AUDIO IN connector (minijack)

Connect to the audio output of a VTR or to a microphone (through a suitable microphone amplifier).

21 AUDIO OUT connector (minijack)

Loop-through output of the AUDIO IN connector. Connect to the audio input of a VTR or another monitor.

INPUT B (22 - 25)

To monitor the input signals to these connectors, depress the INPUT select switch (A B).

22 VIDEO input/output connector (BNC type)

Connect to the video output of a VTR or a color video camera.

When a TV tuner is connected to the TUNER connector and the 75 Ω termination switch 23 is set to OFF, this connector can be used as a loop-through output of the TUNER connector. Connect to the video input of a VTR or another monitor.

23 75 Ω termination switch

Normally set this switch to ON. When both the TUNER and VIDEO connectors are used together for a loop-through connection, set the switch to OFF.

24 AUDIO input/output connector (minijack)

Connect to the audio output of a VTR or to a microphone (through a suitable microphone amplifier).

When a TV tuner is connected to the TUNER connector and the 75 Ω termination switch 23 is set to OFF, this connector can be used as a loop-through output of the TUNER connector. Connect to the audio input of a VTR or another monitor.

25 TUNER connector (6-pin DIN)

Connect to the 6-pin DIN connector of a TV tuner. The video and audio signals are supplied to the monitor and the power from the monitor is fed to the tuner using a single cable.

Note

The TUNER input and the VIDEO/AUDIO inputs 22, 24 cannot be used simultaneously. When connecting a TV tuner to the monitor, be sure to disconnect any input source equipment from the VIDEO and AUDIO connectors, or vice versa.

26 R/G/B BKG (background) controls

Used for adjusting the white balance of the background.

27 R/G/B DRIVE controls

Used for adjusting the white balance at the white peak.

28 AC IN socket

Connect the supplied ac power cord.

29 Battery compartments

Insert the NP-1 battery pack.

30 EJECT buttons

Press the EJECT button upwards to remove the battery pack.

31 OPERATE/CHARGE select switch

Normally set this switch to OPERATE. To charge the battery pack, set to CHARGE. The CHARGE indicator on the front panel lights. When charging is complete, the CHARGE indicator goes out; reset the switch to OPERATE.

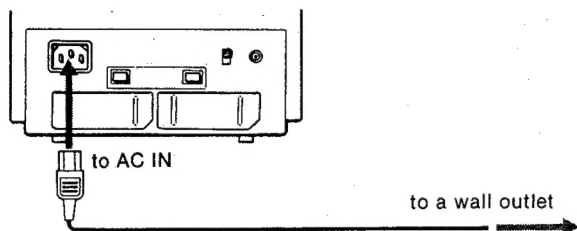
32 EXT BATTERY (external battery) DC IN 12 V jack

Connect the optional DCC-16AE car battery cord.

1-3. POWER SOURCES

HOUSE CURRENT

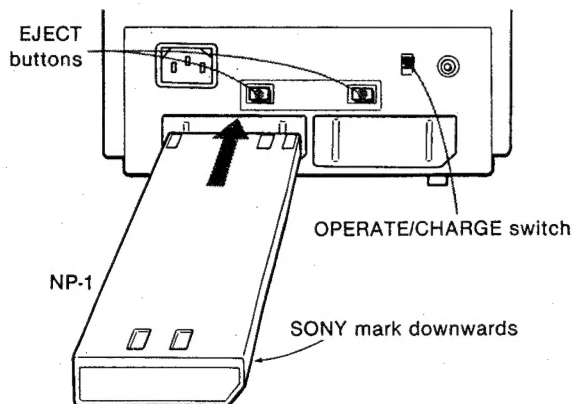
Connect the supplied ac power cord to the AC IN socket and to a wall outlet.



When the ac power cord is plugged into the AC IN socket, the battery pack (if installed) or the car battery (if connected) is automatically disconnected.

RECHARGEABLE BATTERY

Insert the Sony NP-1 battery pack (optional) into the battery compartment as illustrated. The monitor can operate with one or two battery packs. For extended use, two battery packs are recommended.



To remove the battery pack, press the EJECT button upwards.

Note

Make sure that the ac power cord and the car battery cord are disconnected from the monitor. Otherwise, the monitor cannot operate on the battery pack(s).

Charging the battery pack

Before using the monitor, be sure to fully charge the battery pack. The charging time is about 6 hours at normal temperatures.

- 1 Connect the supplied ac power cord to the AC IN socket and then to a wall outlet.
- 2 Insert the battery pack(s) into the battery compartment(s).

- 3 Set the OPERATE/CHARGE switch to CHARGE.
- 4 Depress the POWER switch. The CHARGE indicator lights and charging begins.

When charging is complete, the CHARGE indicator goes out. Be sure to reset the OPERATE/CHARGE switch to OPERATE.

When the OPERATE/CHARGE switch is set to CHARGE, the picture cannot be monitored.

- For quicker charging, use the optional BC-1WA battery charger for NP-1.

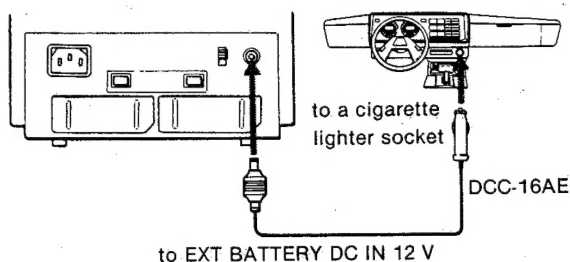
Battery life

At normal temperatures, the picture can be monitored continuously for about 60 minutes using two battery packs and operating the TV tuner connected to the monitor. When the TV tuner is not used, longer battery life can be expected (about 75 to 80 minutes).

When the battery is exhausted, the green BATT indicator flashes for about five minutes, and then the power is turned off automatically to prevent excessive battery discharge. When the BATT indicator goes off, press the POWER switch and replace the exhausted battery pack(s) with fully charged one(s), or use another power source.

CAR BATTERY

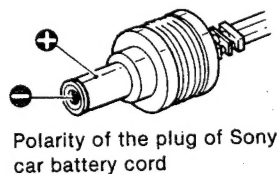
Use the Sony DCC-16AE car battery cord (optional) for a 12 V car battery. Connect the car battery cord to the EXT BATTERY DC IN 12 V jack and to the cigarette lighter socket of a car. For further details, read the instruction manual of the car battery cord.



When the car battery cord is plugged into the EXT BATTERY DC IN 12 V jack, the battery pack (if installed) is disconnected automatically.

Note

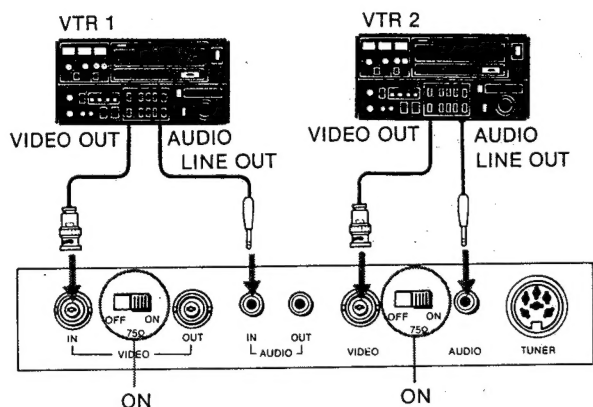
If a car battery cord not manufactured by Sony is used, a fuse must be installed in the car battery cord and the polarity of the plug must be as illustrated.



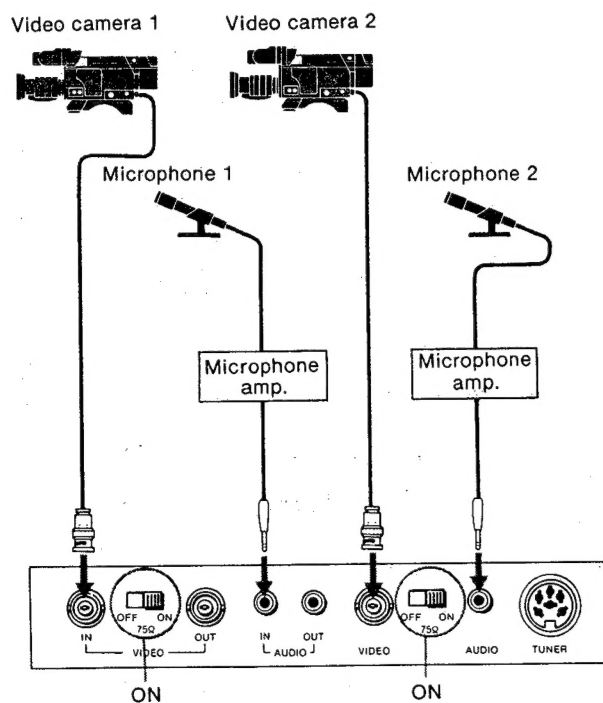
Polarity of the plug of Sony car battery cord

1-4. SYSTEM CONNECTIONS

CONNECTING A VTR

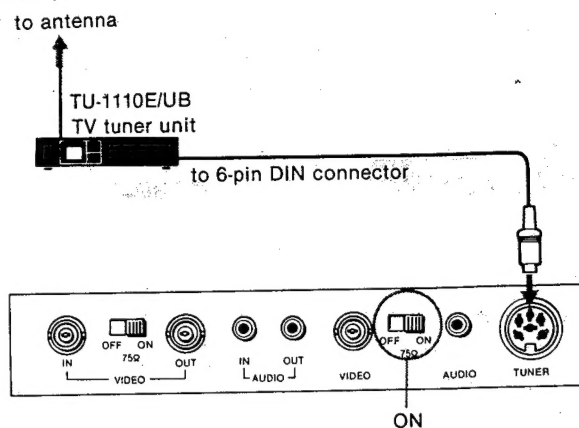


CONNECTING A CAMERA AND A MICROPHONE



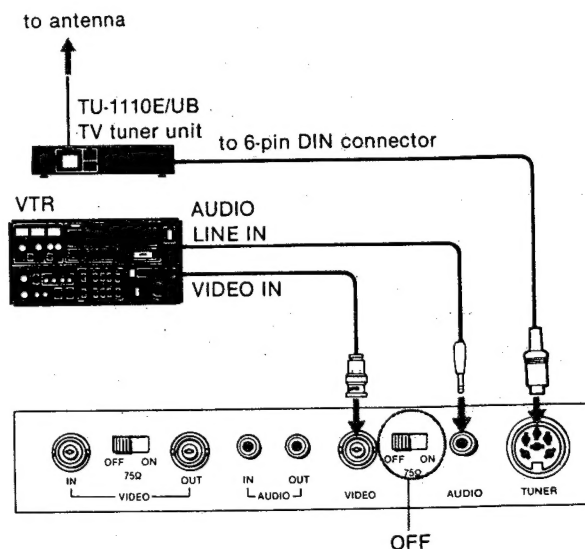
CONNECTING A TV TUNER

The Sony TU-1110E/UB TV tuner unit, which is equipped with a 6-pin DIN connector, can be connected to the monitor.

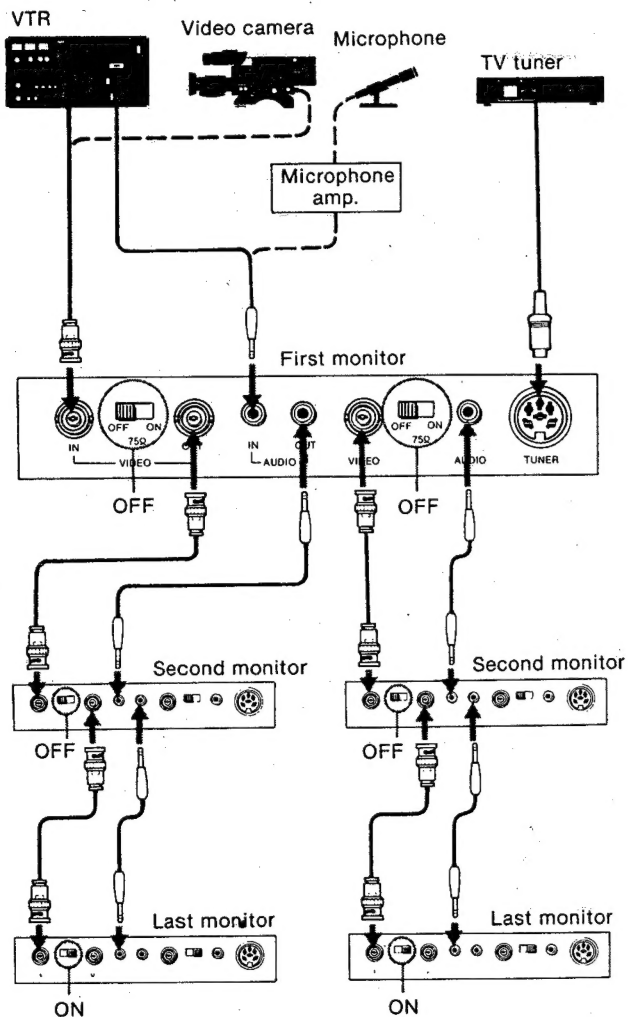


CONNECTING A TV TUNER AND A VTR

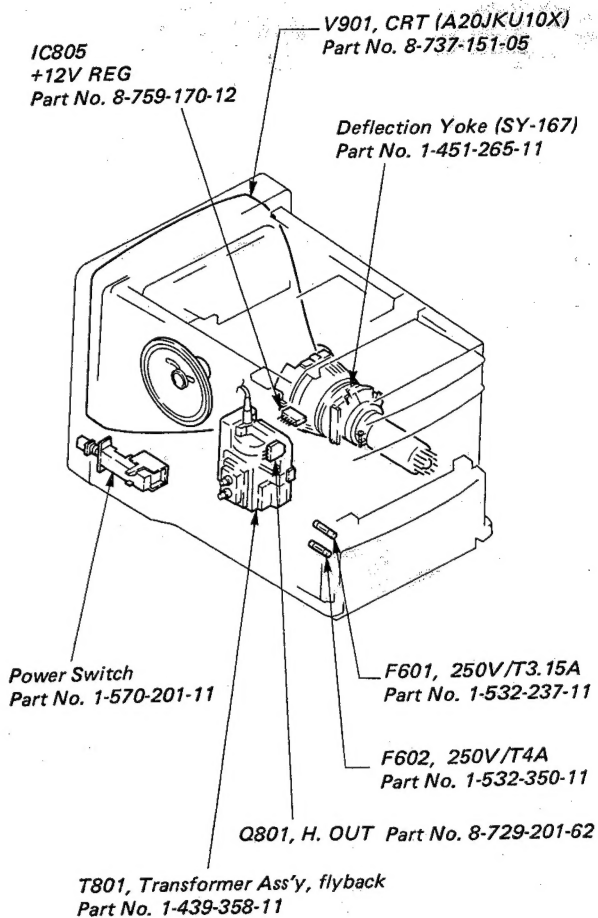
The VIDEO and AUDIO connectors of INPUT B can be used as loop-through outputs of the TUNER connector. By making the following connection, TV programs received by the TV tuner can be recorded on a VTR while monitoring the picture.



The loop-through connection is convenient for monitoring the same signal on several monitors. Use the VIDEO OUT and AUDIO OUT connectors of INPUT A, and for the TV tuner, use the VIDEO and AUDIO connectors of INPUT B. Up to 10 monitors can be connected for each group. Set the 75Ω termination switch of the last monitor to ON and those of the other monitors to OFF.

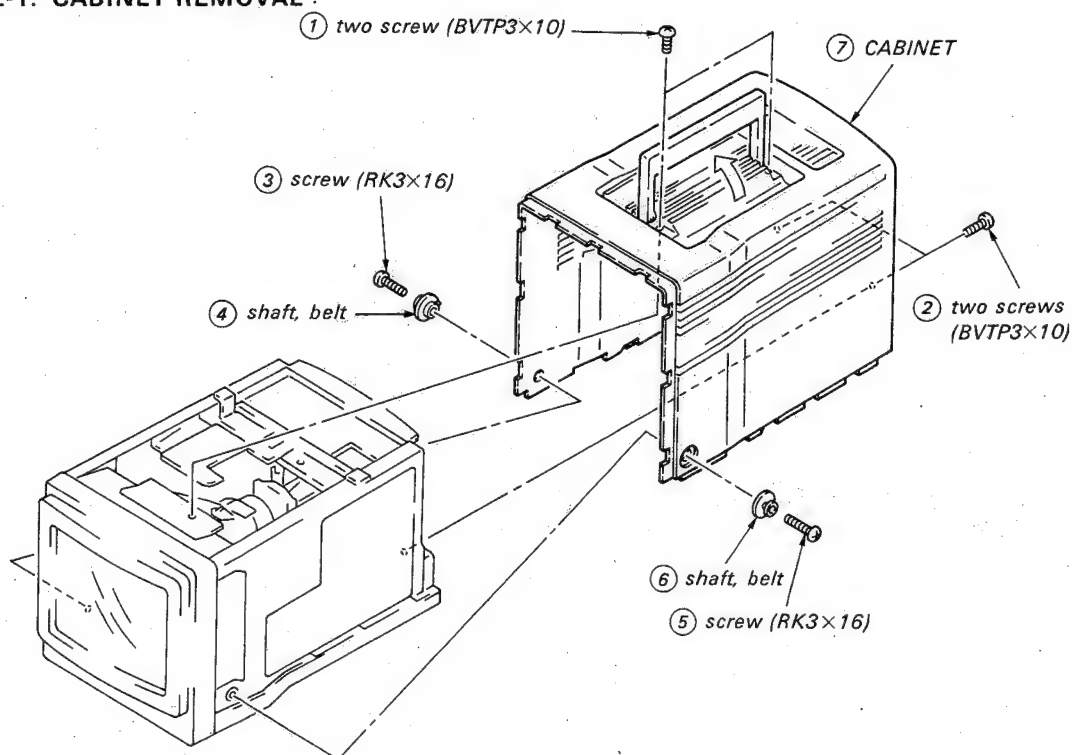


1-5. INTERNAL VIEW

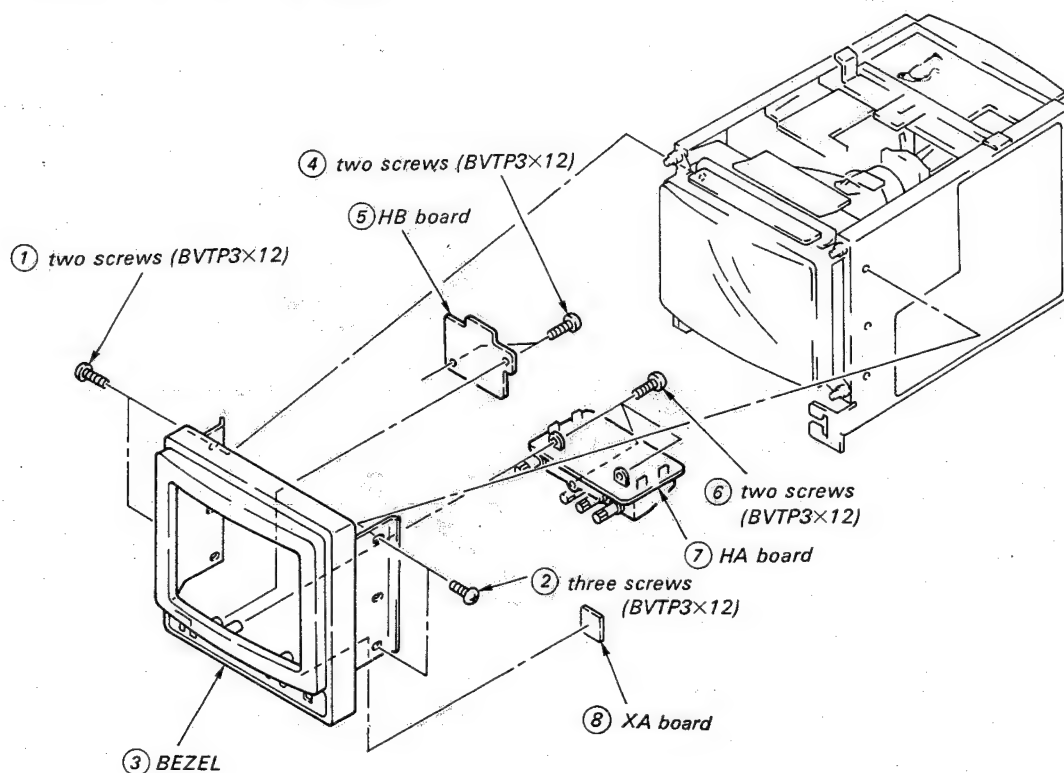


SECTION 2 DISASSEMBLY AND REPLACEMENT

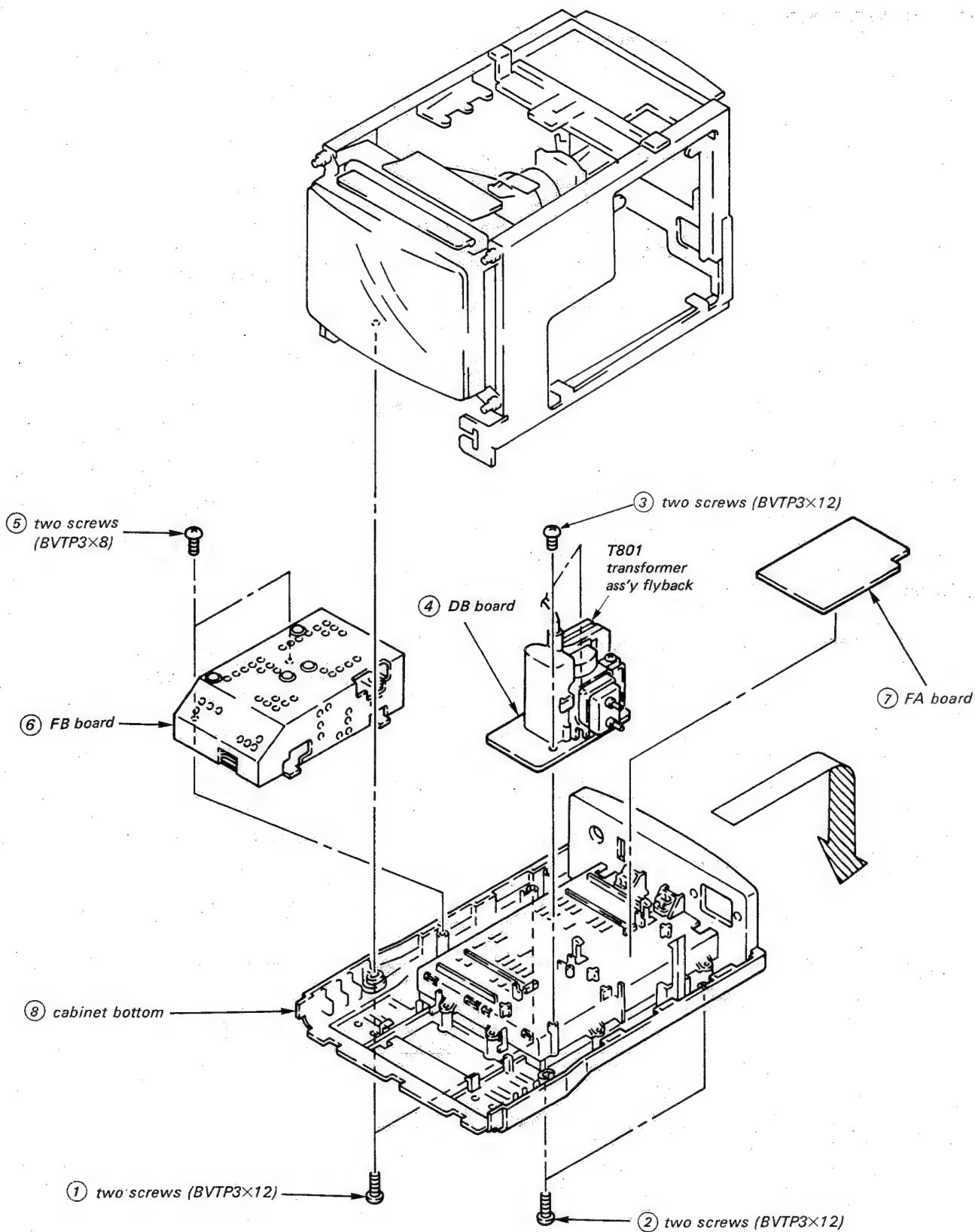
2-1. CABINET REMOVAL



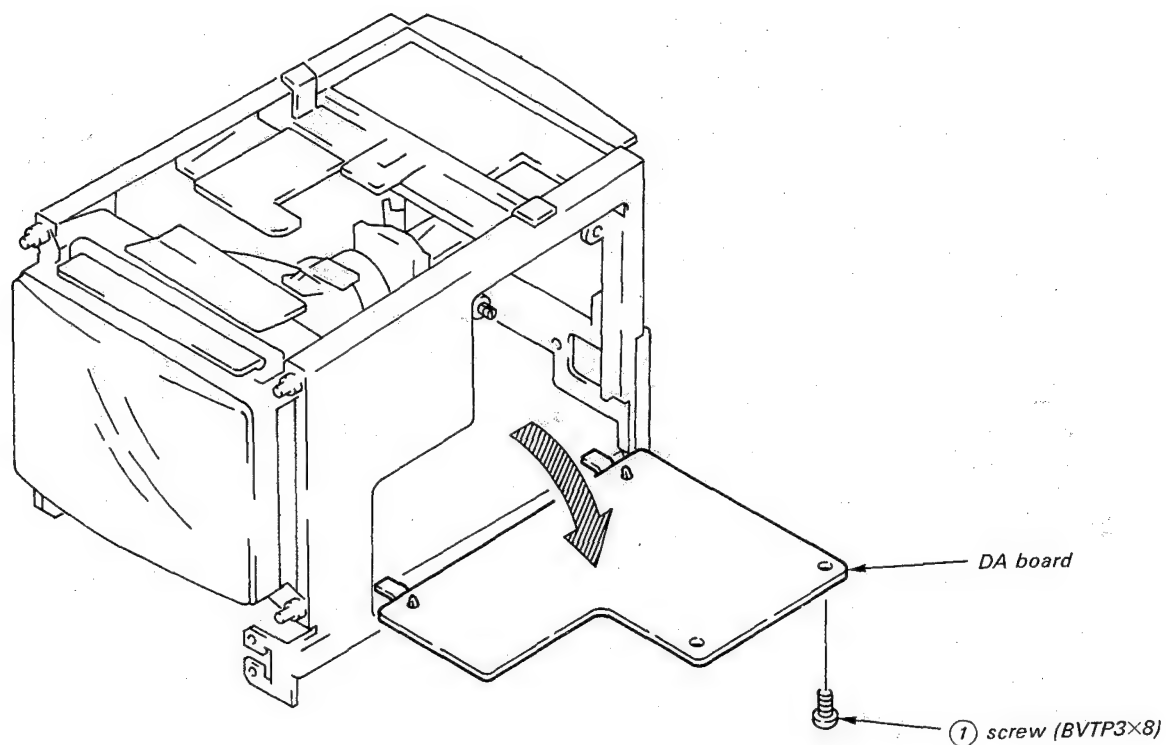
2-2. BEZEL REMOVAL (HA, HB, XA BOARD)



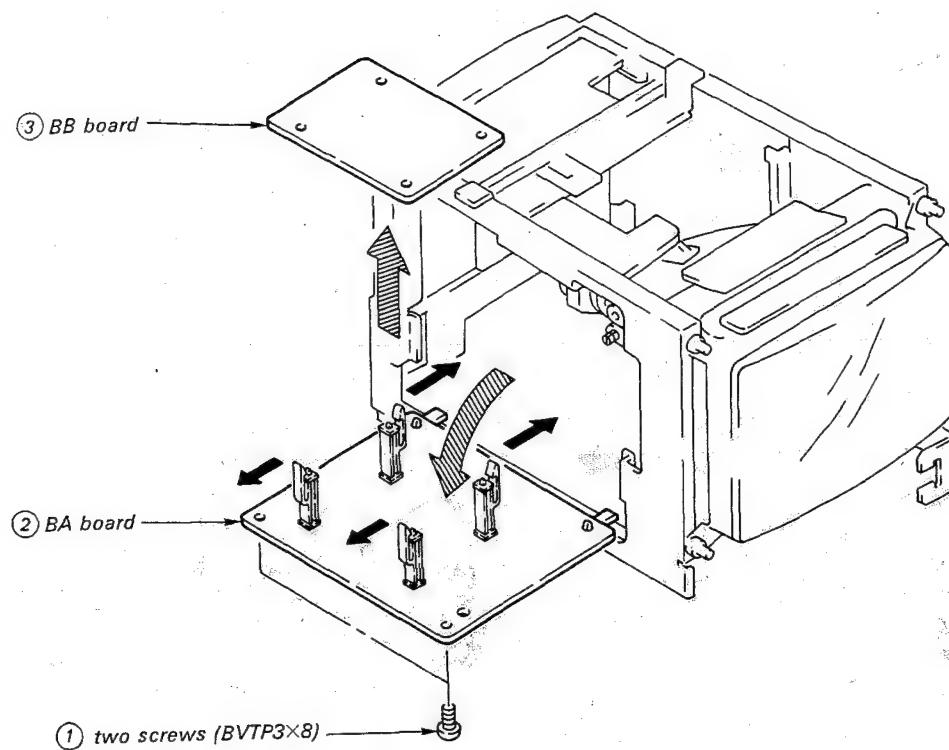
2-3. CABINET BOTTOM REMOVAL



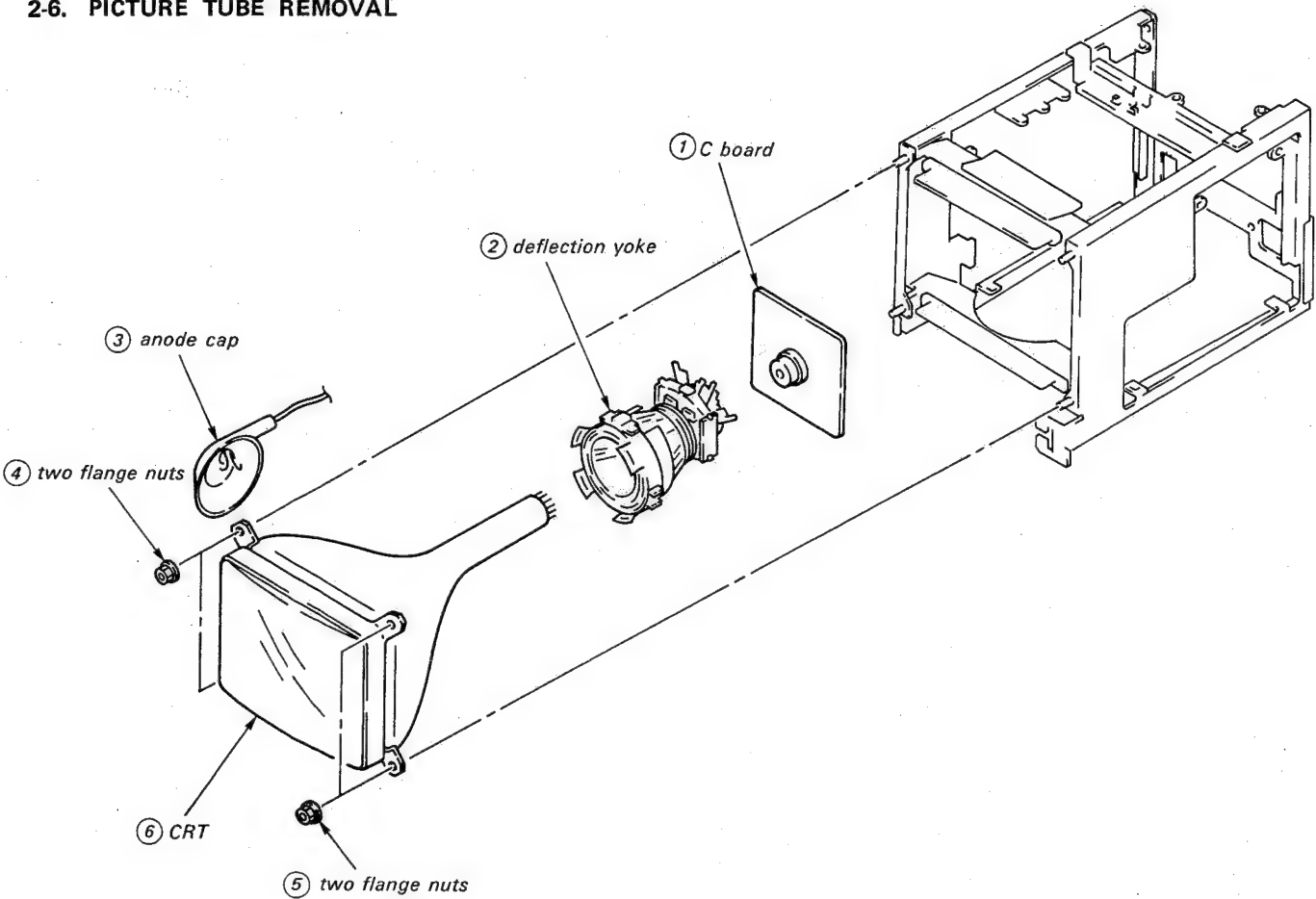
2-4. DA BOARD REMOVAL



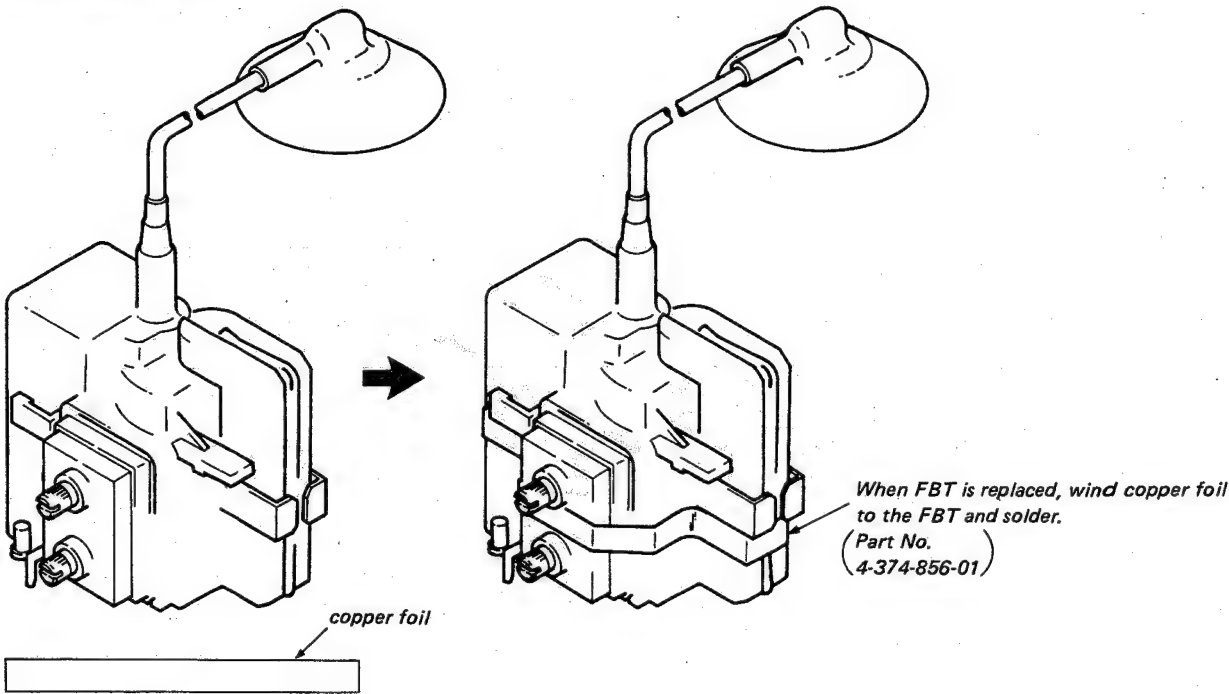
2-5. BA, BB BOARD REMOVAL



2-6. PICTURE TUBE REMOVAL



2-7. REPLACING, FBT



SECTION 3 ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

Controls and switch should be set as follows unless otherwise noted:

BRT, CONTR controls fully clockwise

Make the following adjustments in the order as follows given:

- 3-1-1. Beam Landing
- 3-1-2. Focus Adjustment
- 3-1-3. Convergence
- 3-1-4. White Balance

Note: Test Equipment Required

- 1. Color-bar/pattern generator
- 2. Degausser

3-1. SETUP ADJUSTMENTS

3-1-1. BEAM LANDING

Preparation:

- Before starting, degauss the entire screen.
- 1. Loosen deflection yoke screw.
- 2. Remove deflection yoke spacers.
- 3. Adjust purity control to center the slide between two projections as shown in Fig. 1-1.
- 4. Slide deflection yoke as far forward as it will go.
- 5. Turn RED CUT OFF VR (RV259) MAX and GREEN (RV261) and BLUE CUT OFF RV (RV263) MIN.
- 6. Turn purity control to center vertical red band as shown in Fig. 1-2.
- 7. Slide deflection yoke back for a uniform red screen.
- 8. Check green and blue rasters for uniformity. Repeat the steps 6, 7 and 8.
- 9. Turn all CUT OFF VR (RV259, 261, 263) for mechanical CENTER.
- 10. Install the deflection yoke spacers.
- 11. Tighten the deflection yoke screw.
- 12. Check if mislanding appears at corners a-d as shown in Fig. 1-3. If mislanding is observed, correct it as shown in Fig. 1-4.

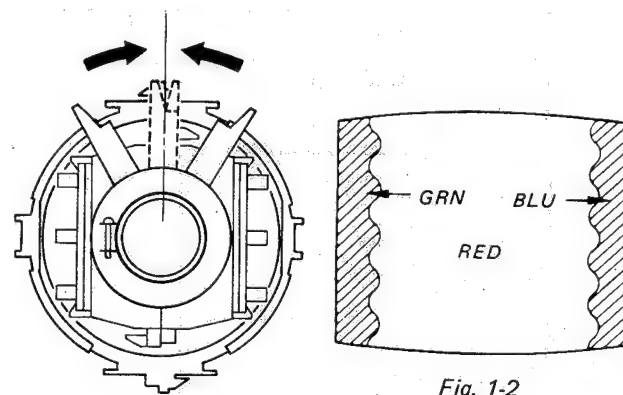


Fig. 1-1

Fig. 1-2

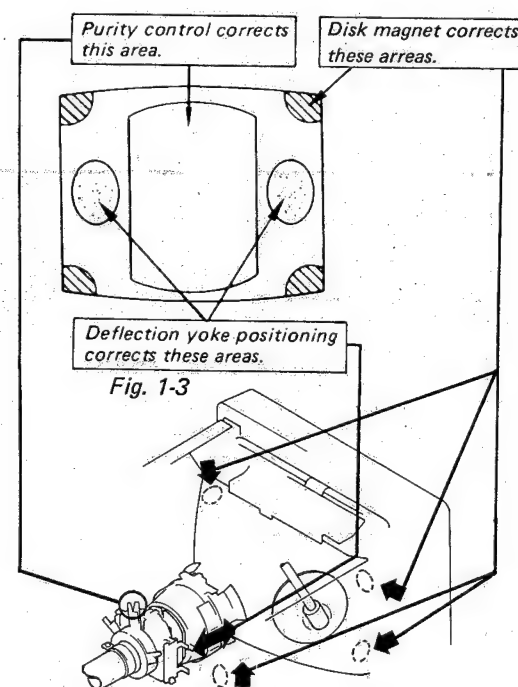
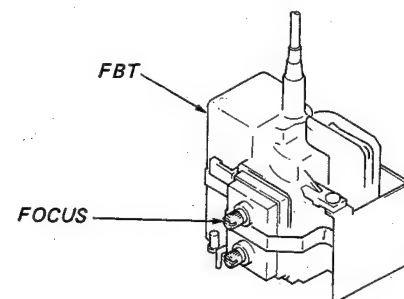


Fig. 1-4



3-1-2. FOCUS ADJUSTMENT

- (1) Input monoscope signal.
PICTURE control 80%
BRICHT control 50%
- (2) Adjust FOCUS control for a best picture at the center and both sides of the screen.

3-1-3. CONVERGENCE

Preparation:

- Before starting, make FOCUS, H.SIZE, V.SIZE and V.LIN adjustments.
- Turn BRT control fully counterclockwise.
- Feed in the dot pattern.

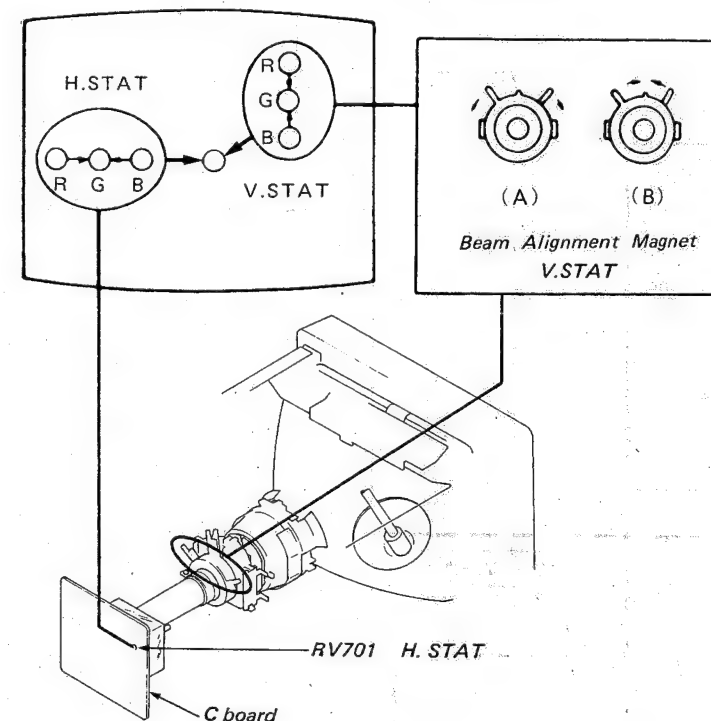
- (1) Horizontal Static Convergence and Vertical Static Convergence

If blue dot does not coincide with red and green dots.

Move BMC magnet to correct insufficient H.Static convergence.

Rotate BMC magnet to correct insufficient V.static convergence.

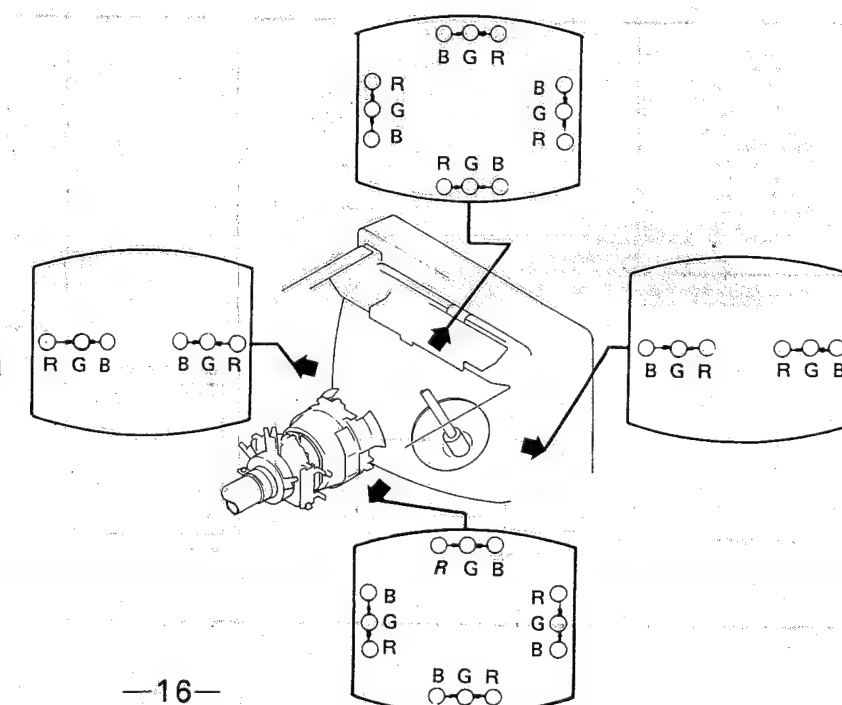
In either case, repeat Beam Landing Adjustment.



- (2) Dynamic Convergence Adjustment

Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.
- 1. Loosen deflection yoke screw.
- 2. Remove deflection yoke spacers.
- 3. Move the deflection yoke for best convergence as shown below.
- 4. Tighten the deflection yoke screw.
- 5. Install the deflection yoke spacers.



3-1-4

(1)

1.

2.

3.

4.

(2)

1.

2.

3.

4.

5.

6.

7.

3-1-3. CONVERGENCE

Preparation:

- Before starting, make FOCUS, H.SIZE, V.SIZE and V.LIN adjustments.
- Turn BRT control fully counterclockwise.
- Feed in the dot pattern.

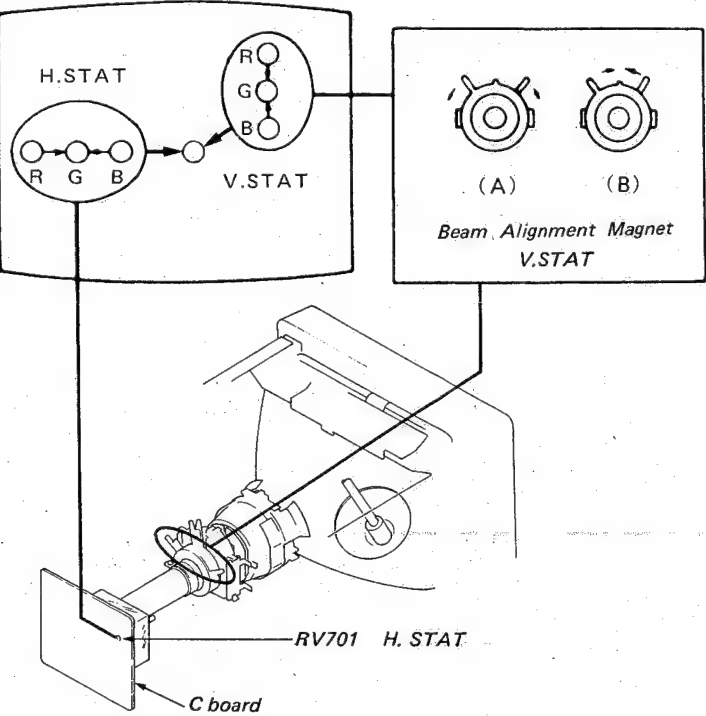
(1) Horizontal Static Convergence and Vertical Static Convergence

If blue dot does not coincide with red and green dots,

Move BMC magnet to correct insufficient H.Static convergence.

Rotate BMC magnet to correct insufficient V.static convergence.

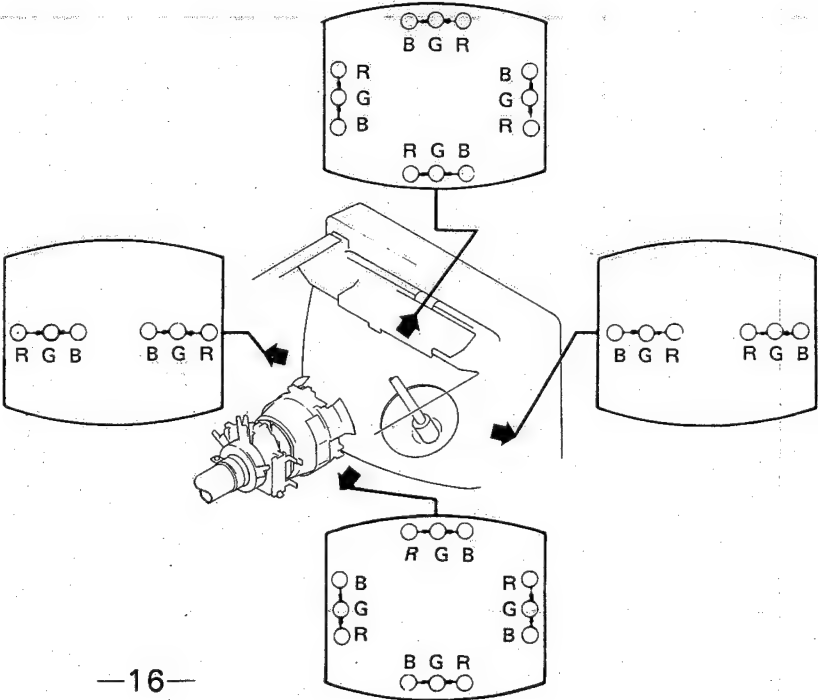
In either case, repeat Beam Landing Adjustment.



(2) Dynamic Convergence Adjustment

Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.
- Loosen deflection yoke screw.
 - Remove deflection yoke spacers.
 - Move the deflection yoke for best convergence as shown below.
 - Tighten the deflection yoke screw.
 - Install the deflection yoke spacers.



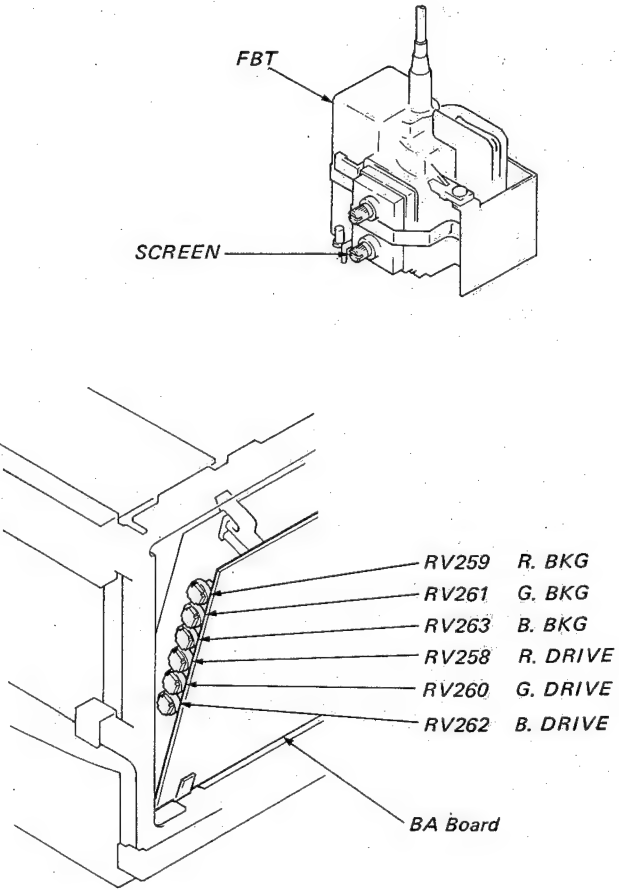
3-1-4. WHITE BALANCE

(1) SCREEN (G2)

- Input a dots pattern.
- Set the PICTURE control at minimum and turn the BRIGHT control fully counterclock wise.
- Confirm that BKG voltage is less than 105V dc when turning RV259 (R.BKG), RV261 (G.BKG) and RV263 (B.BKG).
- Note the color which becomes visible first when turning SCREEN VR.

(2) WHITE BALANCE

- Input a cross-hatch pattern.
- Set the PICTURE control to minimum and turn the BRIGHT control click position.
- Turn RV262 (B.DRIVE), RV260 (G.DRIVE) and RV258 (R.DRIVE) fully clockwise.
- Set RV259 (R.BKG), RV261 (G.BKG) and RV263 (B.BKG) to minimum.
- Turn RV509 (SUB BRT) slowly to obtain a faintly visible cross-hatch. Note the color that first becomes visible by turning. Do not turn a BKG control for this color.
- Adjust the other two BKG controls for best white balance (neutral gray) of the faint cross-hatch. Set the PICTURE control to maximum and turn the BRIGHT control fully clockwise. Observe the screen and adjust the DRIVE controls for best white balance.
- Repeat steps 1. through 6. several times.



3-2. CIRCUIT ADJUSTMENTS

Note: (1) TEST EQUIPMENT REQUIRED

1. Oscilloscope
2. Digital multimeter
3. Color-bar/pattern generator

(2) INPUT SIGNAL

When making these adjustments, supply a color-bar or an off-air signal.

- (3)** These adjustment should be performed with the rated power supply voltage unless otherwise noted.

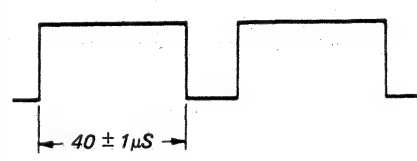
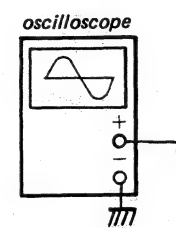
(4) CIRCUIT ADJUSTMENTS

| Adjustment | Circuit Board | Page |
|---|---------------|-------|
| 1H DELAY V. DELAY LINE PULSE DELAY | BB | 18-19 |
| SUB CONTRAST SECAM COLOR LEVEL | HA | 20 |
| ANT PAL SUB COLOR APC KILLER POINT CHROMA TRAP SECAM (ID) SECAM (B-Y) BAT ACC | BA | 21-23 |
| POWER SUPPLY OPERATION BATTERY PROTECTOR | FB | 24 |
| +B ADJ BLANKING OPERATION CHECK H BLANKING H FREQ V LINE UNDER SCAN, V SIZE V SIZE V CENT | DA | 24-26 |

3-2-1. BB BOARD ADJUSTMENTS

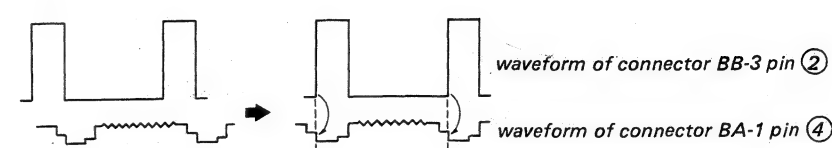
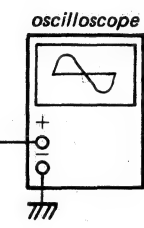
1H DELAY ADJUSTMENT

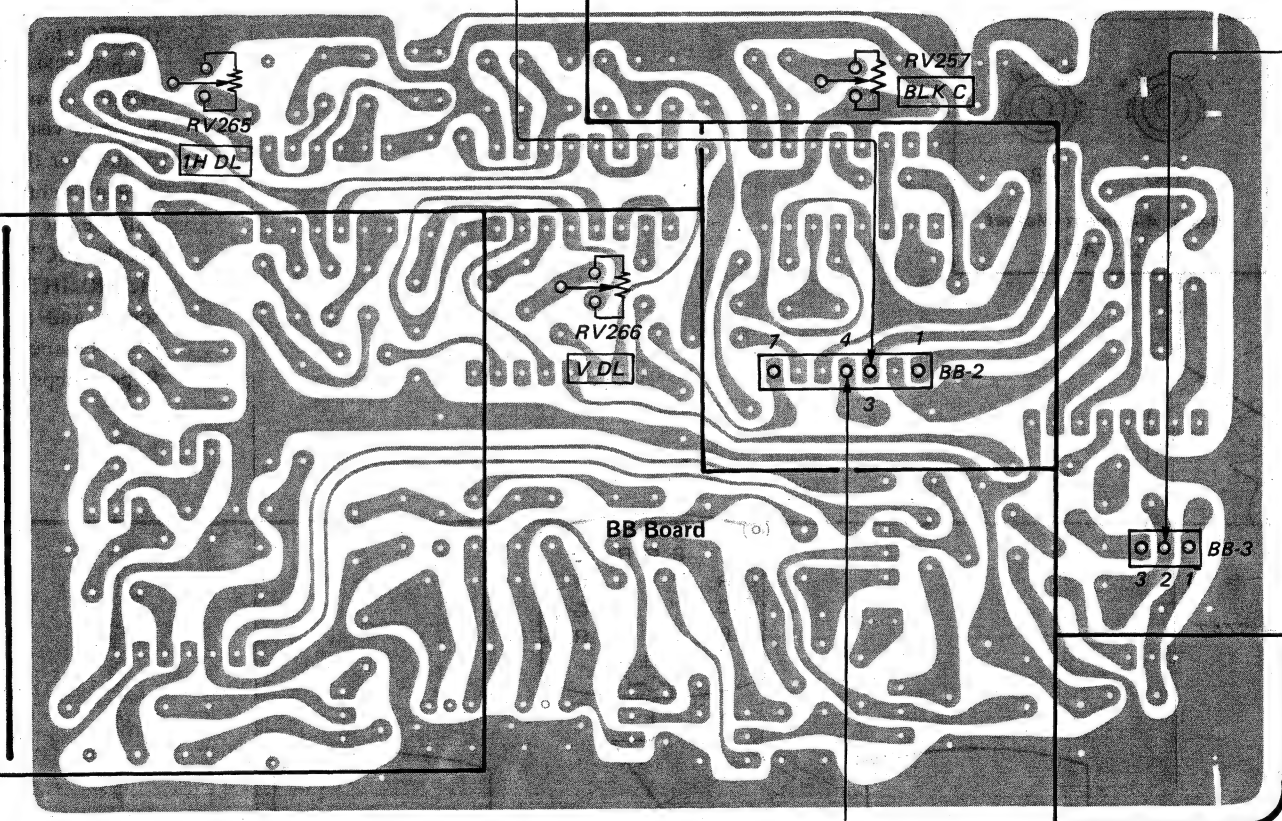
- Input a PAL color bar signal.
PICTURE .80%
BRT50%
- Observe the connector BB-2 pin ③ waveform on the oscilloscope, and adjust RV265 for $40 \pm 1\mu\text{sec}$.

LINE PULSE DELAY ADJUSTMENT

- Input an color bar signal.
- Set the DELAY mode.
- Connect dual oscilloscope at pin ② of BB-3 and pin ④ of BA-1.
- Adjust RV257 for the waveform to becomes as Fig. 1.

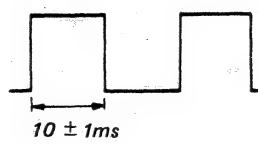
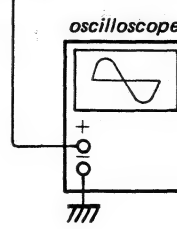





BB Board

V. DELAY ADJUSTMENT

- Input a PAL color bar signal.
PICTURE 80%
BRT 50%
- Observe the connector BB-2 pin ④ waveform on the oscilloscope, and adjust RV266 for $10 \pm 1\text{msec}$.

ADJUSTMENTS

ADJUSTMENT

1. Input a color bar signal.
2. Set the **DELAY** mode.
3. Connect dual oscilloscope at pin ② of BB-3 and pin ④ of BA-1.
4. Adjust RV257 for the waveform to become as Fig. 1.

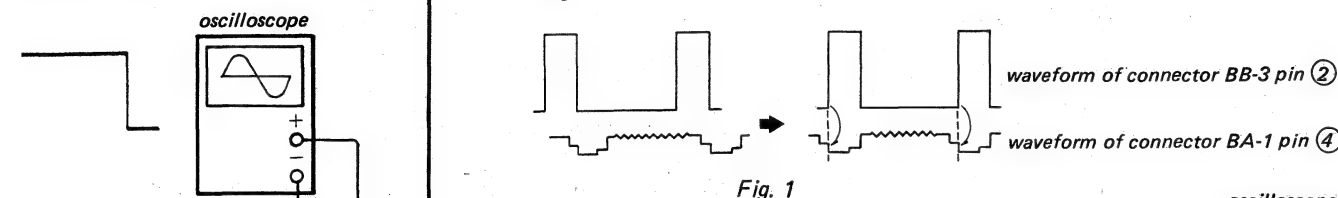
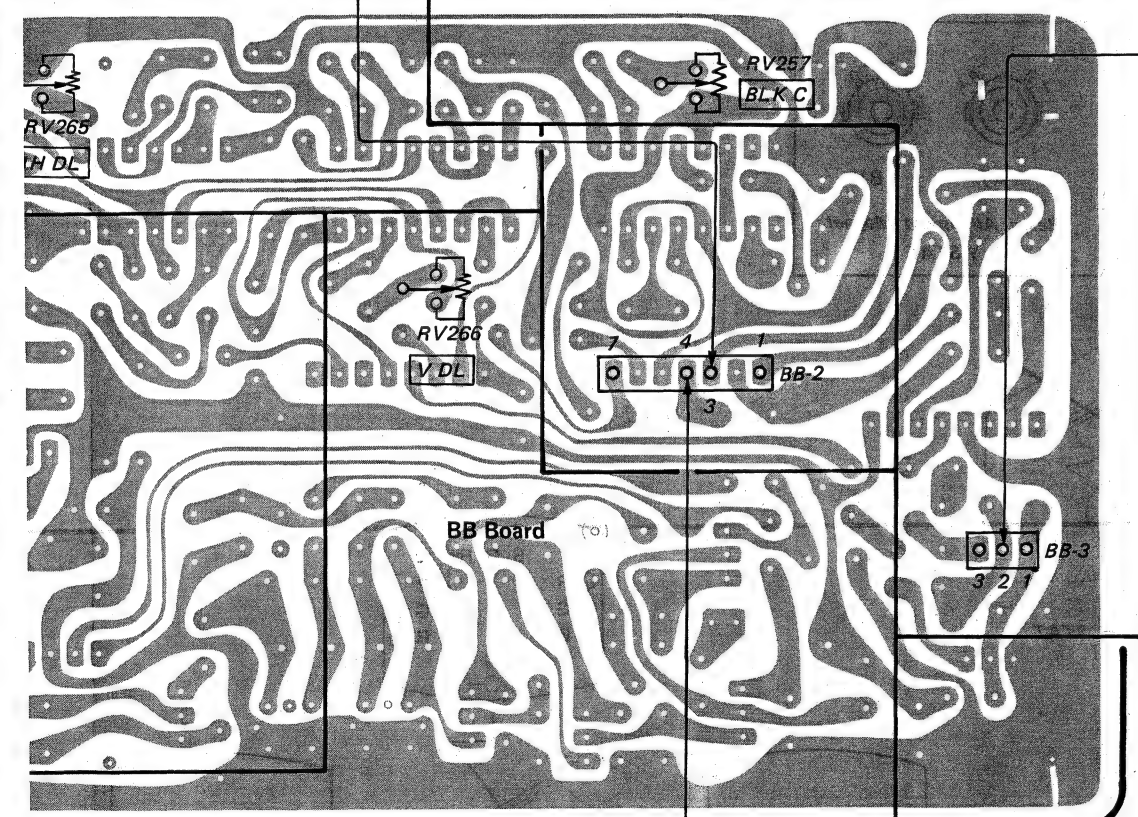
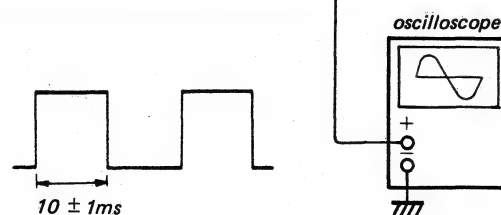


Fig. 1



VT
Signal.

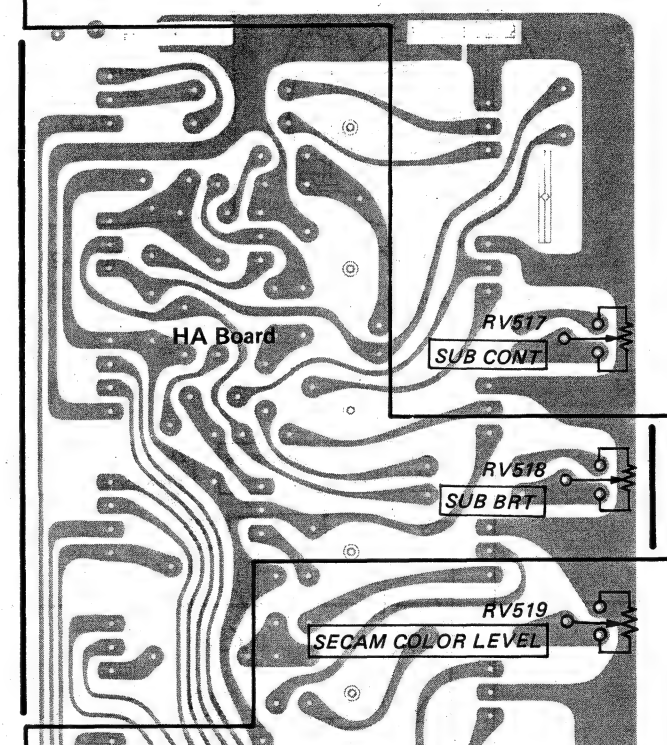
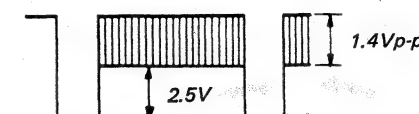
BB-2 pin ④ waveform on
just RV266 for $10 \pm 1\text{msec}$.



3-2-2. HA BOARD ADJUSTMENTS

SUB CONTRAST ADJUSTMENT

- Input a monoscope pattern signal.
PICTURE 100%
BRT 50%
- Observe connector BA-6 pin ③ on the oscilloscope and adjust RV517 so that the signal component is 1.4Vp-p .



SECAM COLOR LEVEL ADJUSTMENT

- Input a SECAM color bar.
- Connect oscilloscope at pin ③ of BA-6 connector.
- Set the PICTURE control at max and COLOR control at center.
- Adjust RV519 (HA board) for the waveform at connector BA-6 pin ③ to become as Fig. 1.

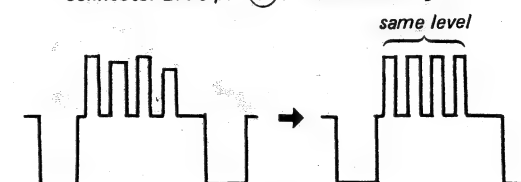
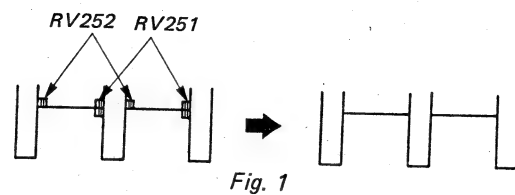


Fig. 1

3-2-3. BA BOARD ADJUSTMENTS

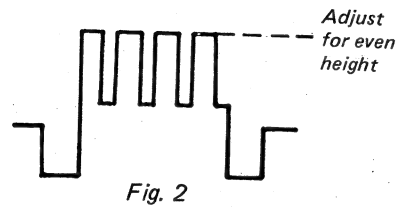
ANT PAL ADJUSTMENT

1. Input a PAL special color bar.
2. Connect an oscilloscope to pin ③ of BA-6 connector.
3. Set the COLOR control at center.
4. Adjust RV251 and RV252 for the waveform at connector BA-6 pin ③ to become as Fig. 1.



SUB COLOR ADJUSTMENT

1. Input a PAL color bar signal.
PICTURE 100%
COLOR 50%
2. Adjust RV264 for the waveform at connector BA-6 ③ to become as Fig. 2.

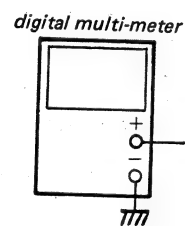


APC ADJUSTMENT

1. Input a PAL color bar signal.
PICTURE 80%
BRIGHT 50%
COLOR 50%
2. Connect a 100kΩ resistor between IC253 pin ⑬ and ground (Killer circuit goes off).
3. Connect a 10μF/25V chemical capacitor between IC253 pin ⑮ and ground.
4. Adjust RV256 to obtain the stable color picture.
5. Disconnect the 100kΩ resistor and chemical capacitor.

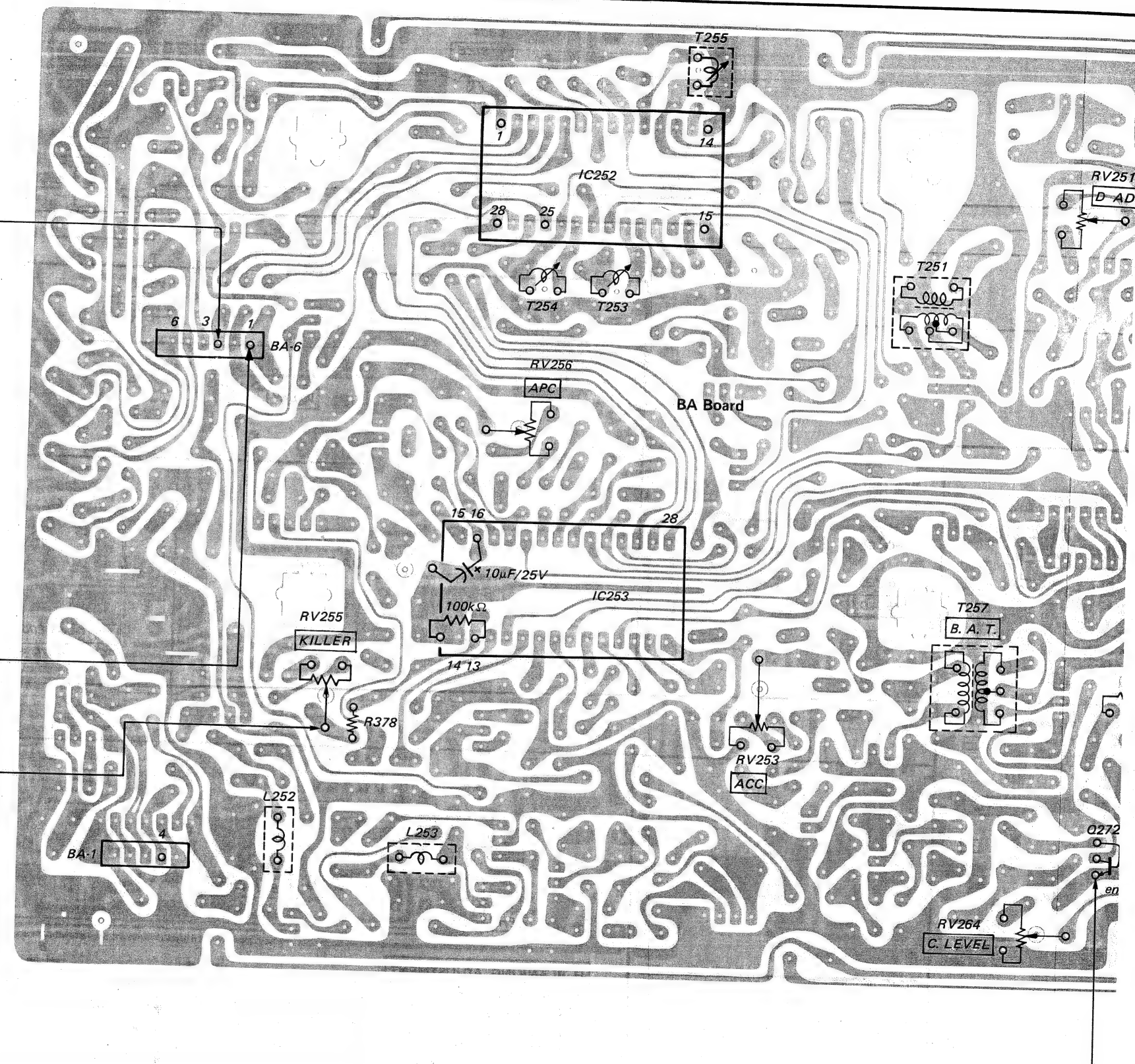
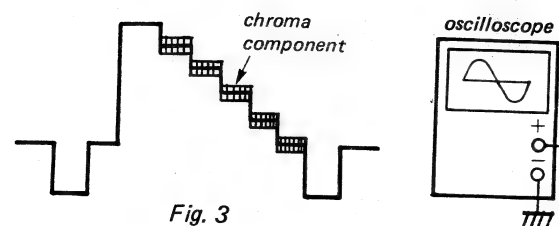
KILLER POINT ADJUSTMENT

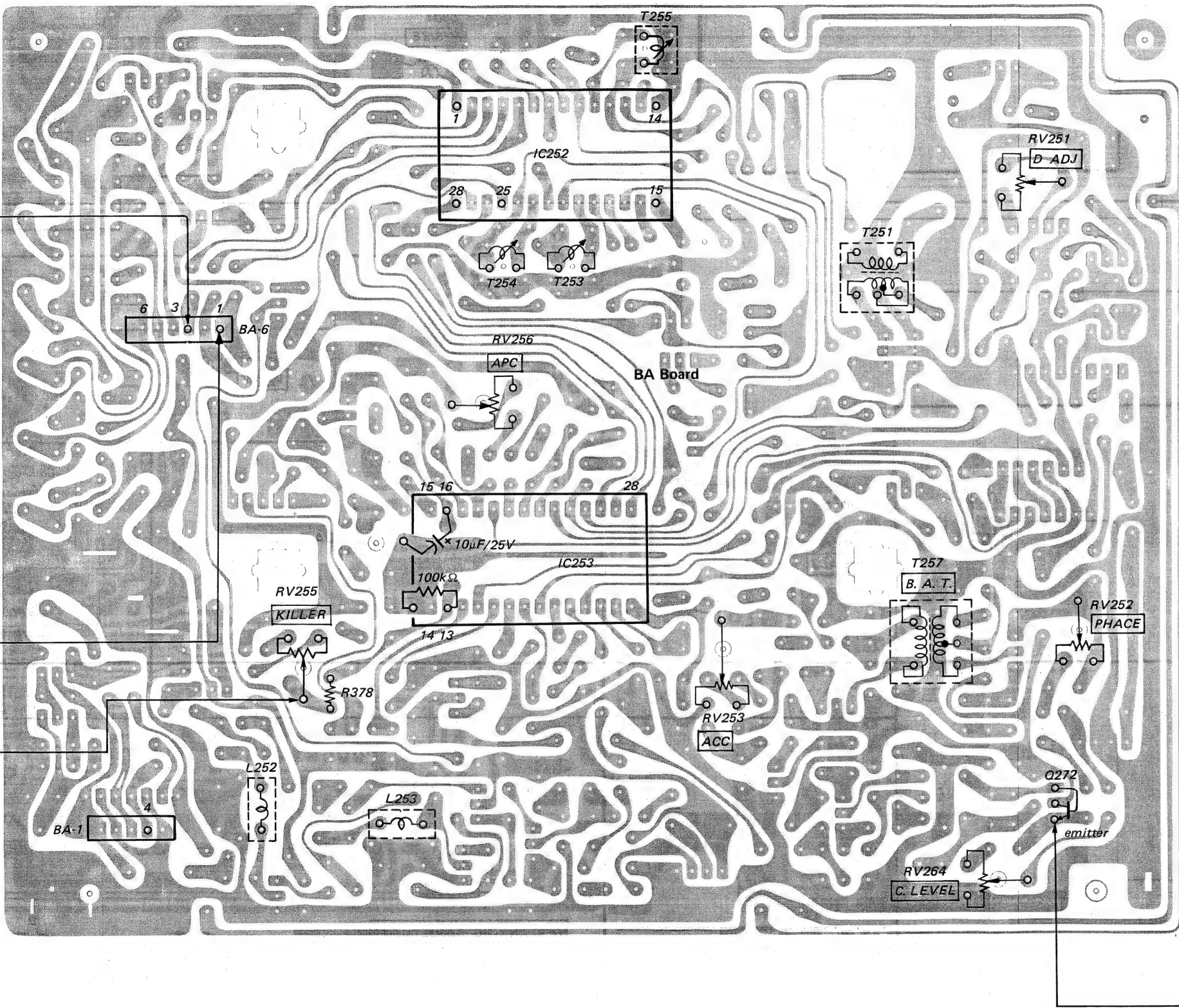
1. Tune in an off-air signal.
2. Connect digital multimeter between R255 and R378.
3. Adjust R255 so that the voltage is 8.3V dc.



CHROMA TRAP ADJUSTMENT

1. Input a SECAM color bar signal.
PICTURE 80%
BRIGHT 50%
2. Observe connector BA-6 pin ① waveform on the oscilloscope and adjust L252 for minimum chroma component.
3. Input a PAL color bar signal.
4. Observe connector BA-6 pin ① waveform on the oscilloscope and adjust L252 for minimum chroma component.



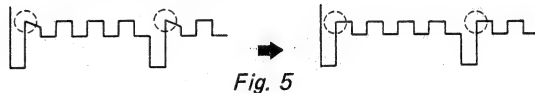


SECAM ADJUSTMENT (ID)

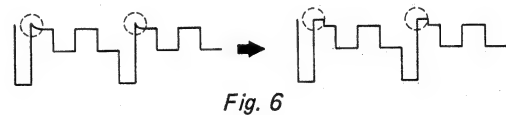
1. Input the SECAM color bar.
2. Connect an digital multimeter to pin 25 of IC252.
3. Adjust T254 so that the digital multimeter reading is maximum.

SECAM ADJUSTMENT (B-Y)

1. Input the SECAM color bar.
2. Connect an oscilloscope to pin 25 of IC252.
3. Adjust T253 for the waveform at pin 25 of IC252 to becomes as Fig. 5.

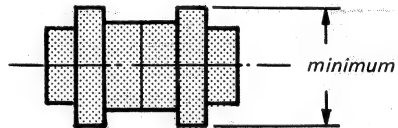


4. Connect an oscilloscope to pin 1 of BA-6 connector.
5. Adjust T255 for the waveform at connector BA-6 pin 1 to become as Fig. 6.



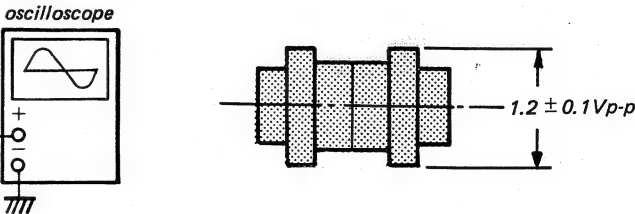
BAT ADJUSTMENT

1. Input a PAL color bar signal.
PICTURE 80%
BRIGHT 50%
COLOR 50%
2. Observe Q272 (E) waveform on the oscilloscope and adjust T257 for minimum chroma component,



ACC ADJUSTMENT1

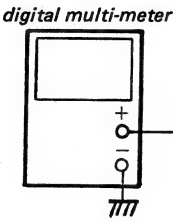
1. Input a PAL color bar signal.
PICTURE 80%
BRIGHT 50%
COLOR 50%
2. Observe Q272 (E) waveform on the oscilloscope and adjust RV253 so that the signal component is $1.2 \pm 0.1V_{p-p}$.



3-2-4. DA AND FB BOARDS ADJUSTMENTS

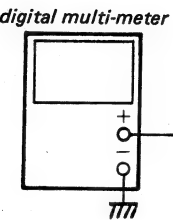
BLANKING OPERATION CHECK

1. Input the monoscope signal.
2. Connect an digital multimeter to TP61.
3. Confirm that the BLANKING circuit operate (the raster disappears) by adding 24.0 ± 0.1 V DC to TP61.



+B ADJUSTMENT

1. Input the monoscope signal.
2. Set the PICTURE control at 80% and each control at 50%.
3. Connect an digital multimeter to TP91.
4. Adjust RV807 so that the voltage is 29 ± 0.1 V.

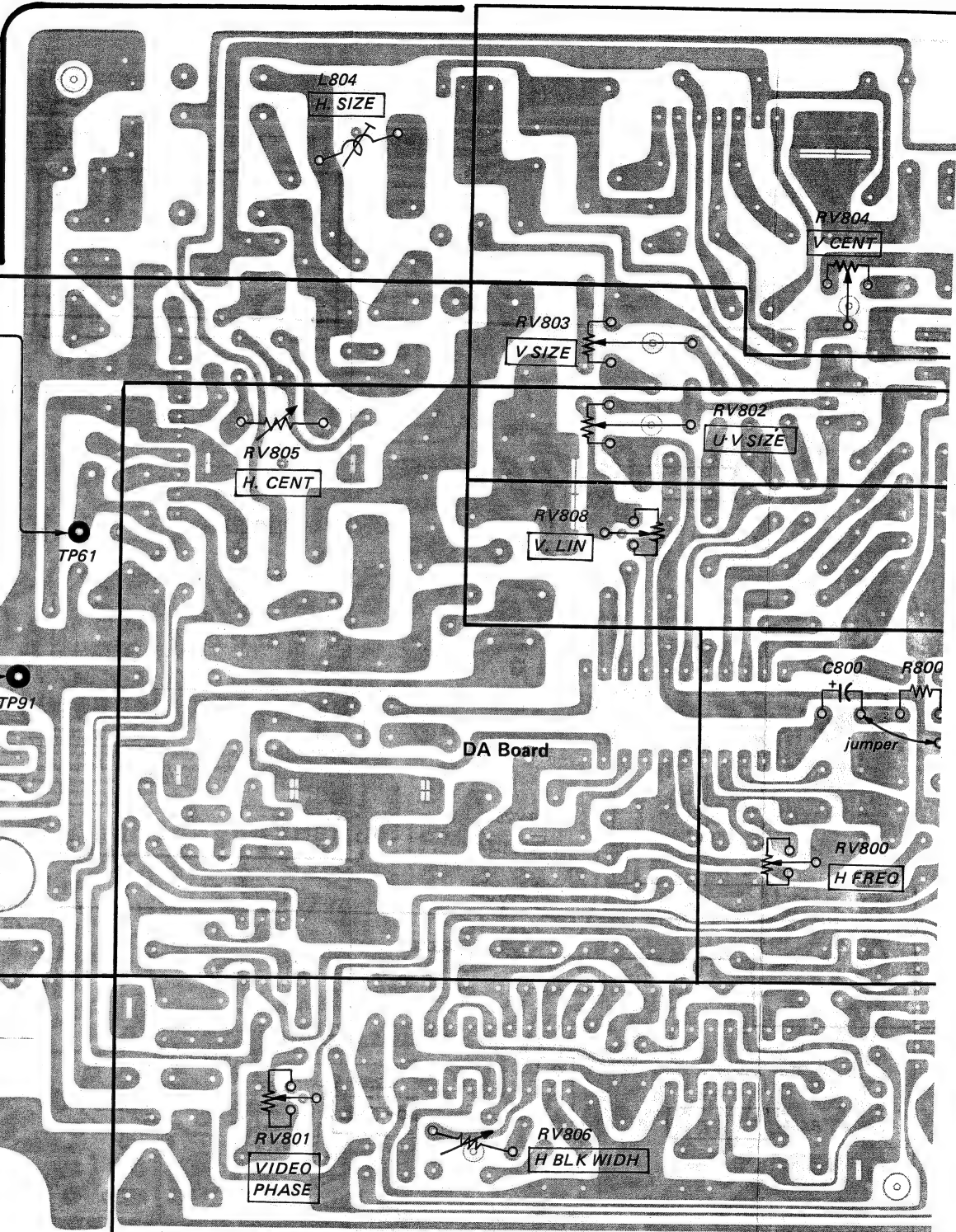
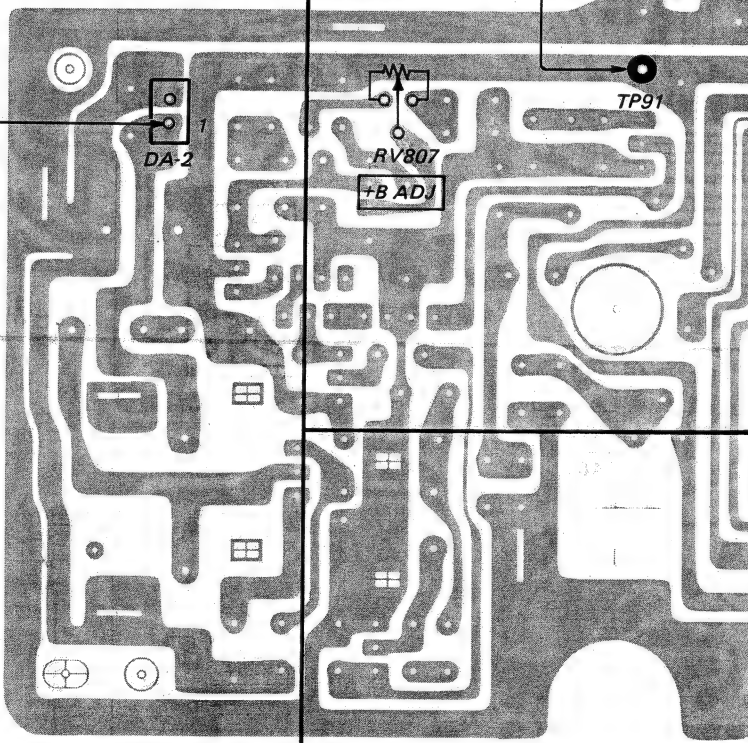
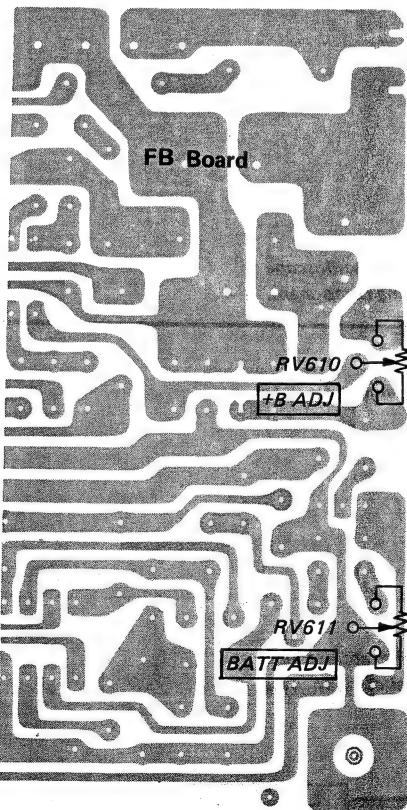
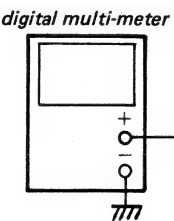


POWER SUPPLY OPERATION CHECK

1. Input a monoscope signal.
2. Connect a digital multi-meter to connector DA-2 pin ①.
3. Adjust RV610 for 15.0 ± 0.2 V DC.

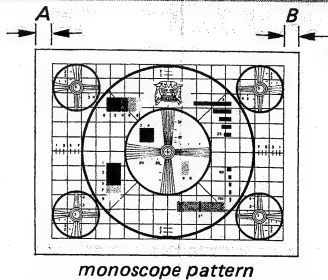
BATELY PROTECTOR ADJUSTMENT

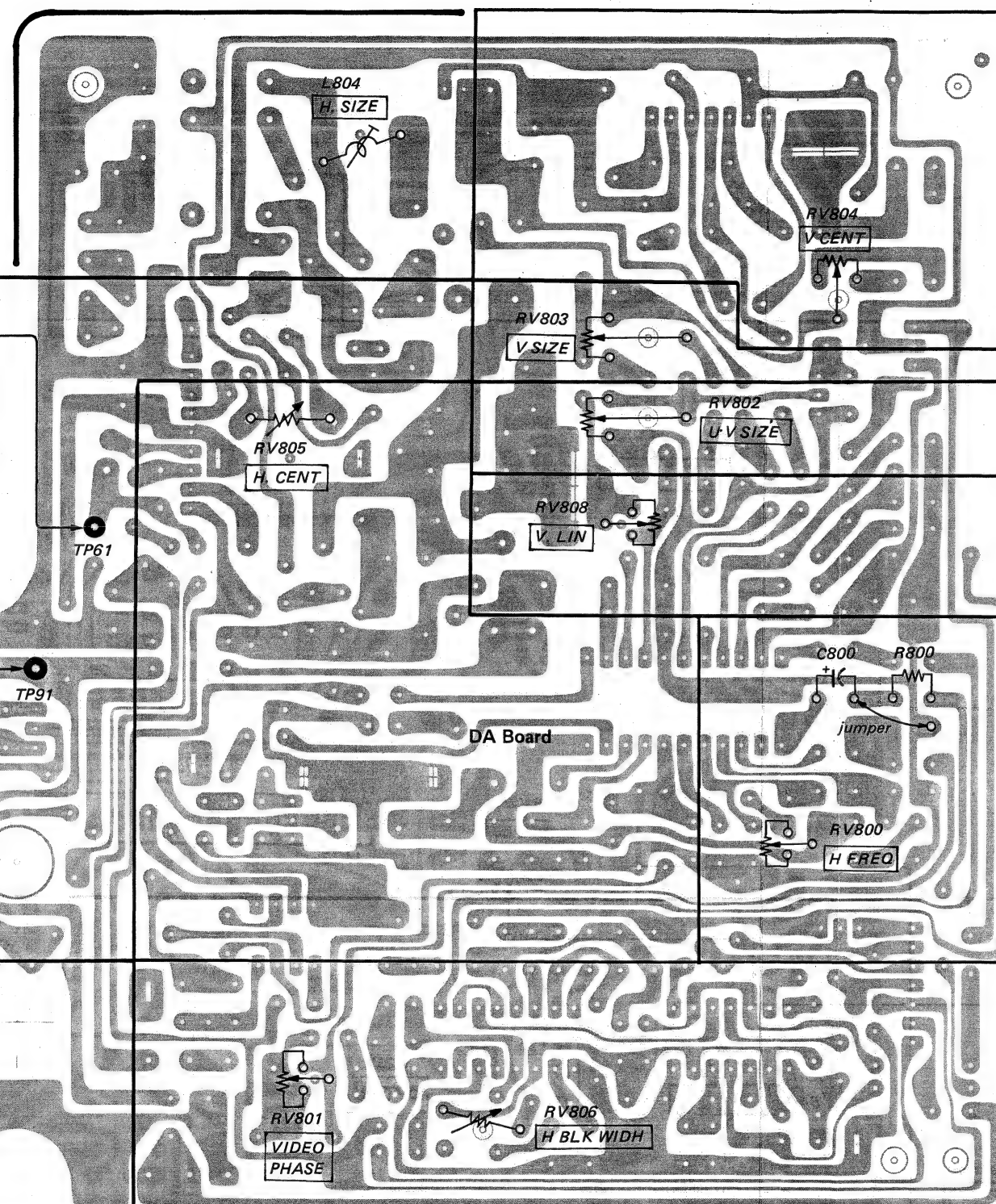
1. Input a 12V DC.
2. Connect a digital multimeter to connector DA-2 pin ①.
3. Adjust RV611 so that voltage $10.2 - 10.3$ V DC.
4. Confirm that the battely protector operate.



H BLANKING ADJUSTMENT

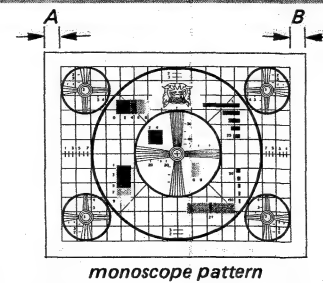
1. Input a PAL monoscope signal.
PICTURE 80%
BRIGHT 50%
SCAN UNDER
2. Adjust VIDEO PHASE (RV801) and H. BLK WIDH (RV806) to be $A = B$, as shown in the figure.





H. BLANKING ADJUSTMENT

1. Input a PAL monoscope signal.
PICTURE 80%
BRIGHT 50%
SCAN UNDER
2. Adjust VIDEO PHASE (RV801) and H. BLK WIDH (RV806) to be $A = B$, as shown in the figure.

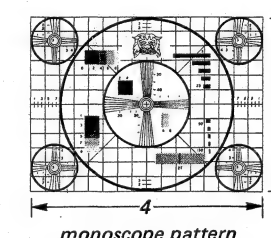


V. CENT ADJUSTMENT

1. Input a PAL monoscope signal.
PICTURE 80%
BRIGHT 50%
2. Adjust with V. CENT (RV804) so that picture is centered.

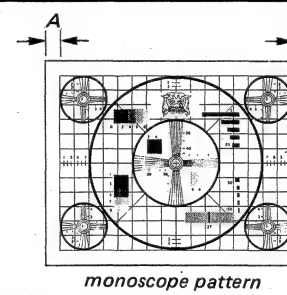
V. SIZE ADJUSTMENT

1. Input a PAL monoscope signal.
PICTURE 80%
BRIGHT 50%
2. Set the V. SIZE (RV803) to obtain a suitable picture.



UNDER-SCAN V. SIZE ADJUSTMENT

1. Input a PAL monoscope signal.
PICTURE .80%
BRIGHT .50%
SCAN . . . UNDER
2. Adjust UN V. SIZE (RV802) so that the monoscope pattern of H. SIZE and V. SIZE is 4:3.

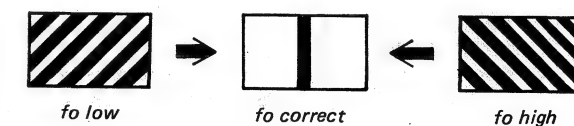


V. LINE ADJUSTMENT

1. Input a PAL monoscope signal.
PICTURE 80%
BRIGHT 50%
2. Adjust V. LINE (RV808) so that the monoscope pattern of A and B is same scal.

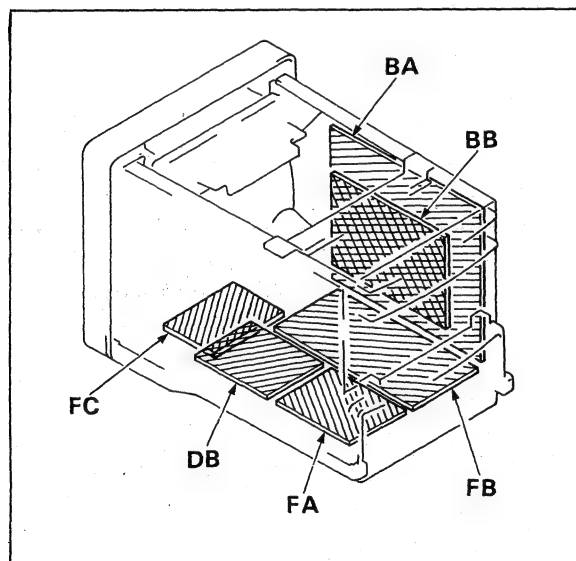
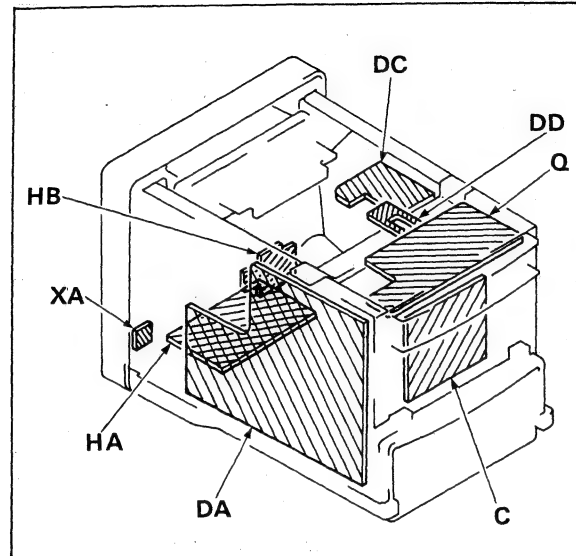
H. FREQ ADJUSTMENT

1. Input a PAL monoscope signal.
PICTURE 80%
BRIGHT 50%
2. Connect a jumper between C800 minus side and ground.
3. Adjust with H. FREQ (RV800) as shown in figure.

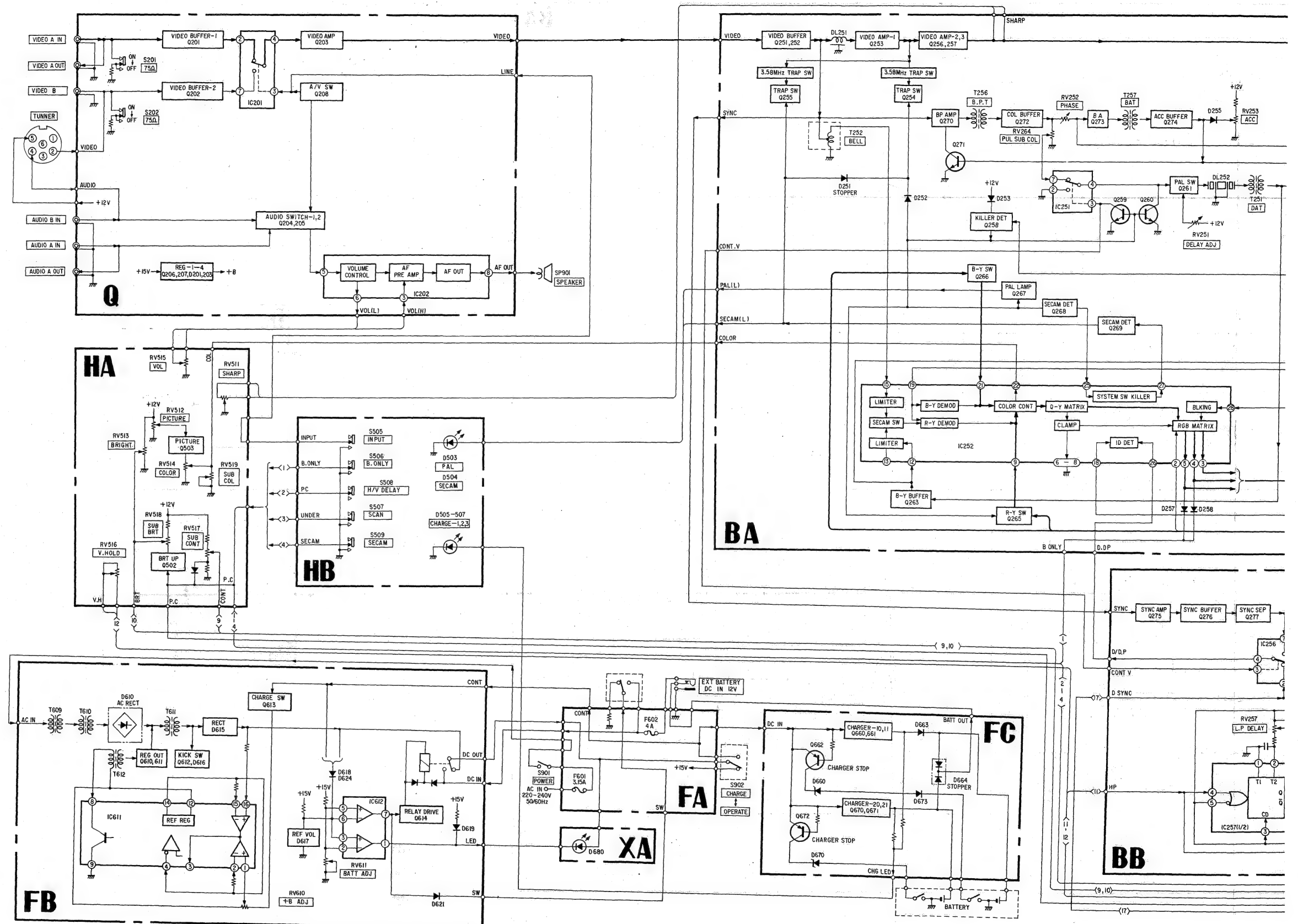


SECTION 4 DIAGRAMS

4-1. CIRCUIT BOARDS LOCATION

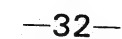



4-2. BLOCK DIAGRAM









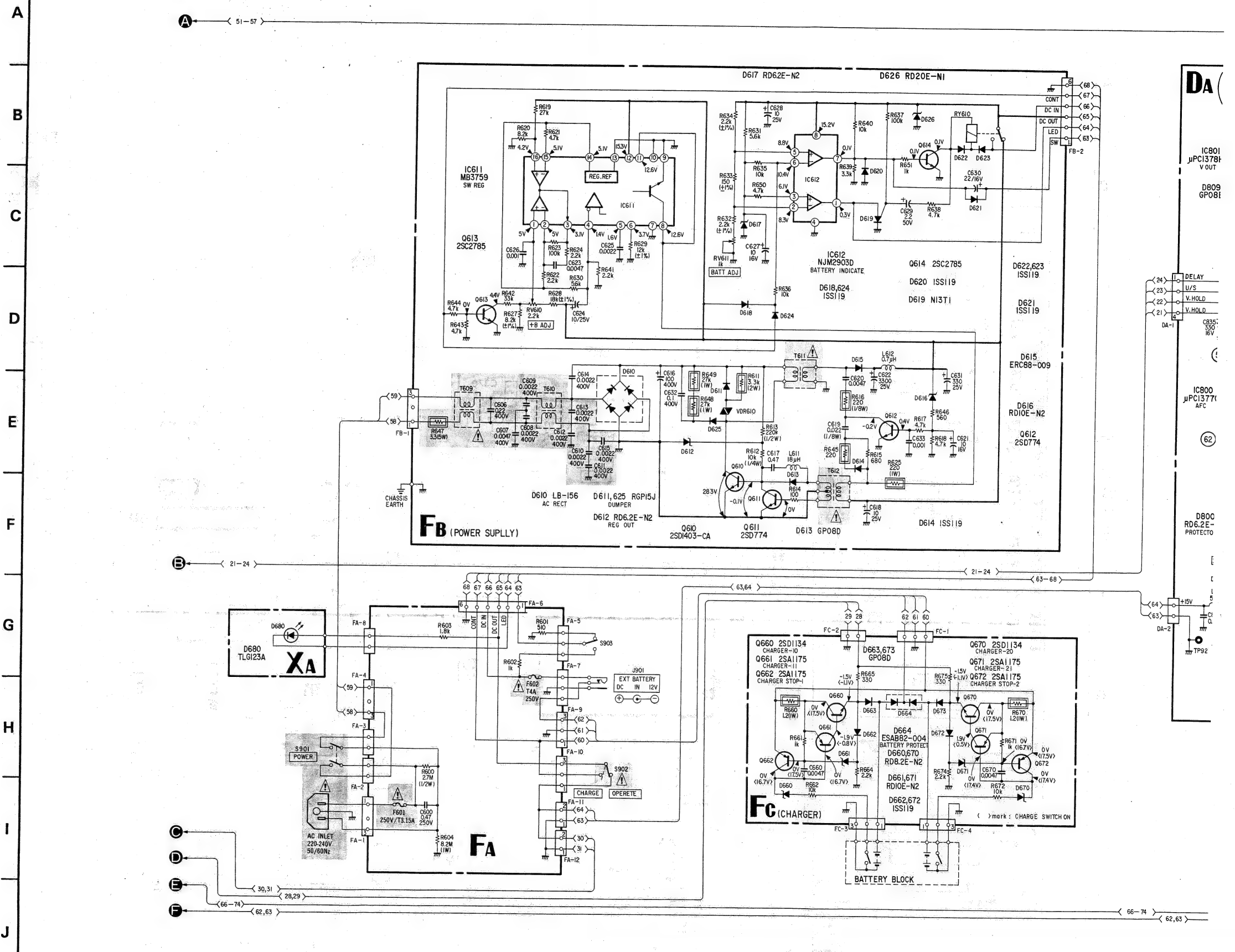
PVM-9020ME PVM-9020ME



Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

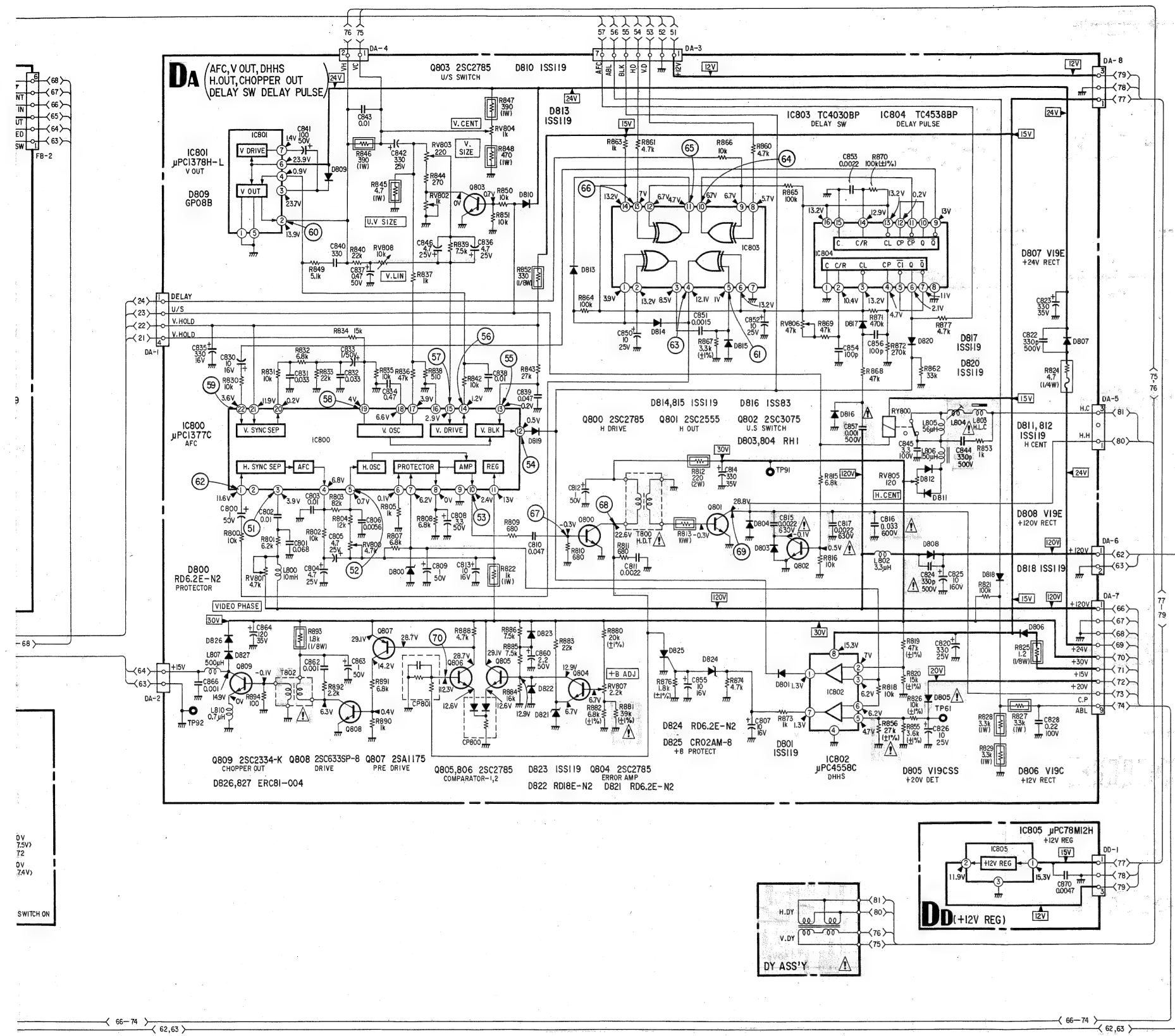
Note:

- All capacitors are in μF unless otherwise noted. p : μF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/6W unless otherwise noted. k : 1000 Ω , M : 1000k Ω
-  : Nonflammable resistor
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
-  : Fusible resistor
- Δ : internal component.
-  : panel designation.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10M Ω digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
-  : adjustment for repair.
- Voltage on FB board is taken with Q610 Emitter.
- Readings are taken with a color-bar signal input. no mark : with PAL color-bar signal received. () : with SECAM color-bar signal received.
- Circled numbers (① - ⑦⑨) are waveform references. Refer to waveform on page 39.
- Refer to waveform on page 39, 40.

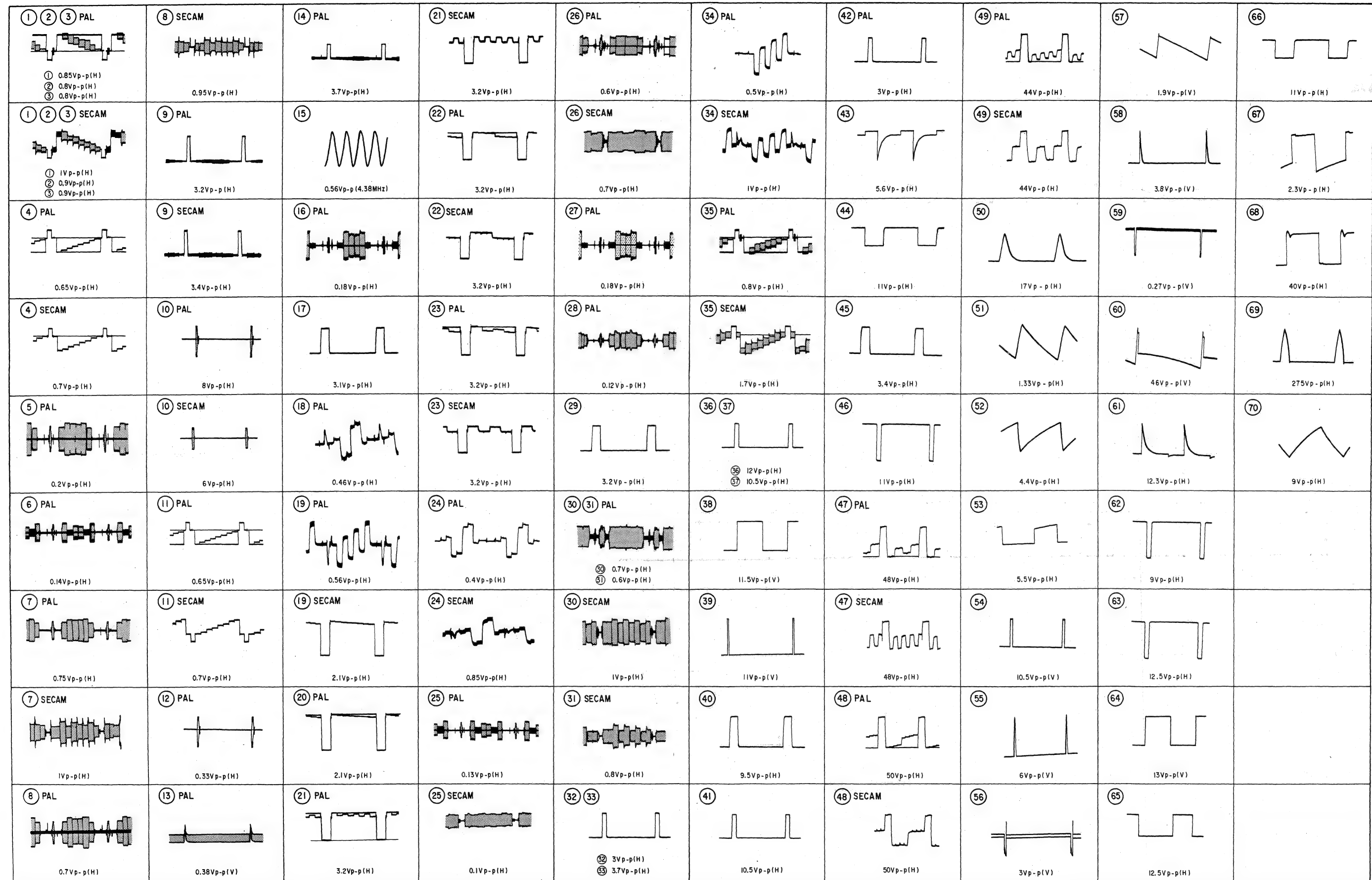


11 12 13 14 15 16 17 18 19 20 21 22

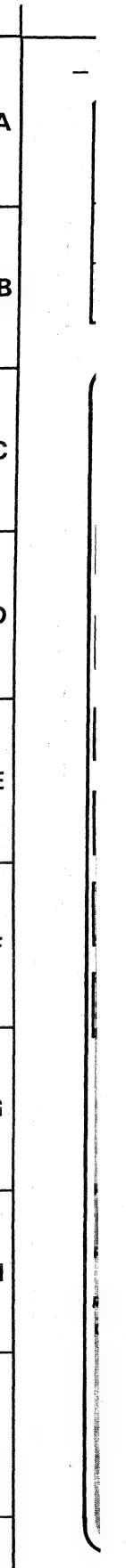
A
B
C
D
E
F
G
H
I
J



4-4. WAVEFORMS



4-5. PRINTED
- Condi



VIDEO AMP
Y. DEMOD, S

BA

BA

C

[R. G. B OUT]

HB

CUSTOMER CONTROL

4-5. PRINTED WIRING BOARDS

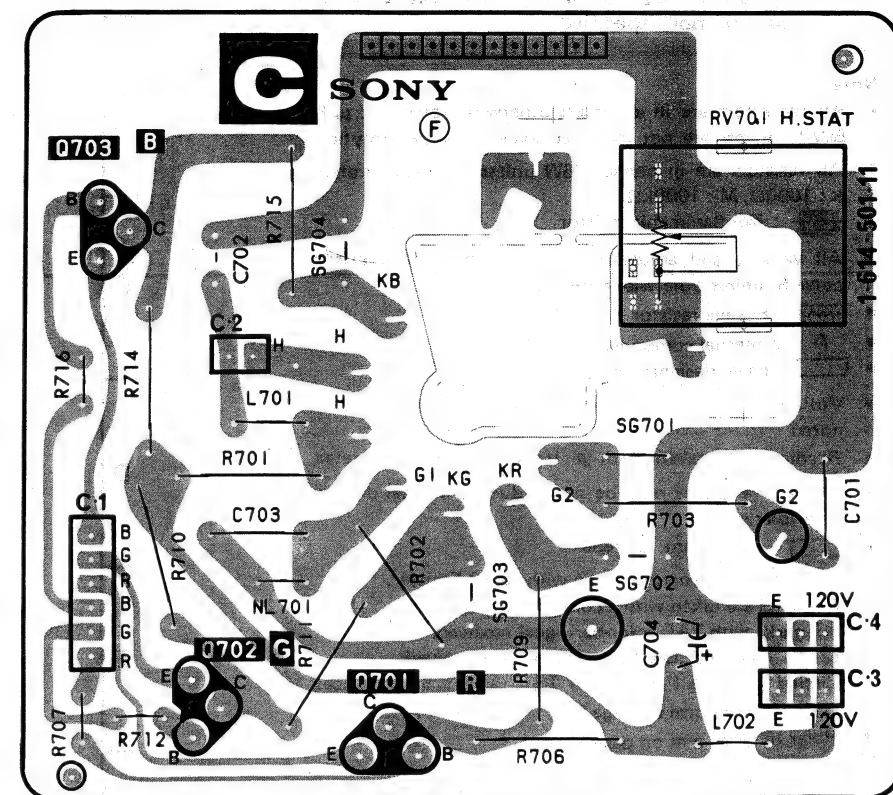
— Conductor Side —

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|

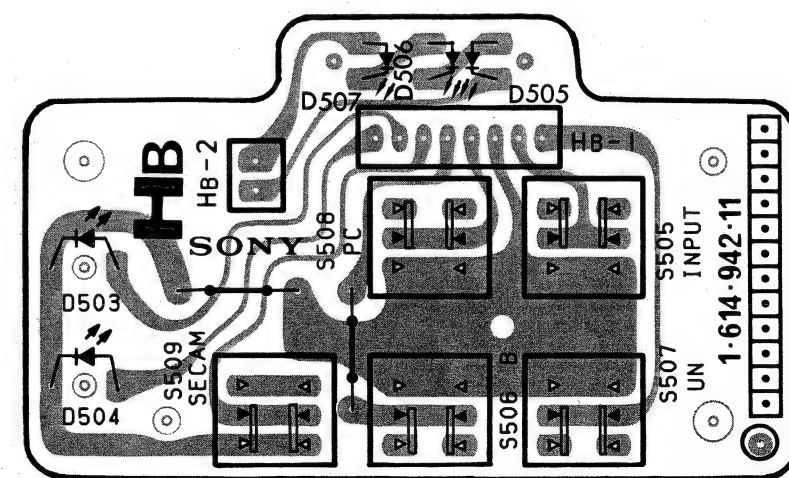
— BA Board —

| | | | | | | | | | | | | | | | | | |
|-----|-------|-----|-------|-------|-----|-------|-----|-----|-----|-----|-----|-----|-------|-----|-------|-----|---|
| Q | 267 | 268 | 269 | IC252 | | | | | | | | | | 262 | 261 | 260 | Q |
| IC | 252 | | | | 258 | IC253 | | | | 263 | 264 | | | 259 | IC251 | IC | |
| | 251 | 253 | 254 | | 256 | 257 | | 271 | 274 | 279 | | 273 | | 272 | | | |
| D | | 257 | 254 | 259 | 251 | 252 | 253 | 255 | | | | | | | | D | |
| ADJ | RV258 | | | | | | | | | | | | | | | AD | |
| | RV263 | | RV255 | | | RV256 | | | | | | | RV251 | | RV252 | | |
| | | | | | | | | | | | | | RV264 | | | | |

— C Board —

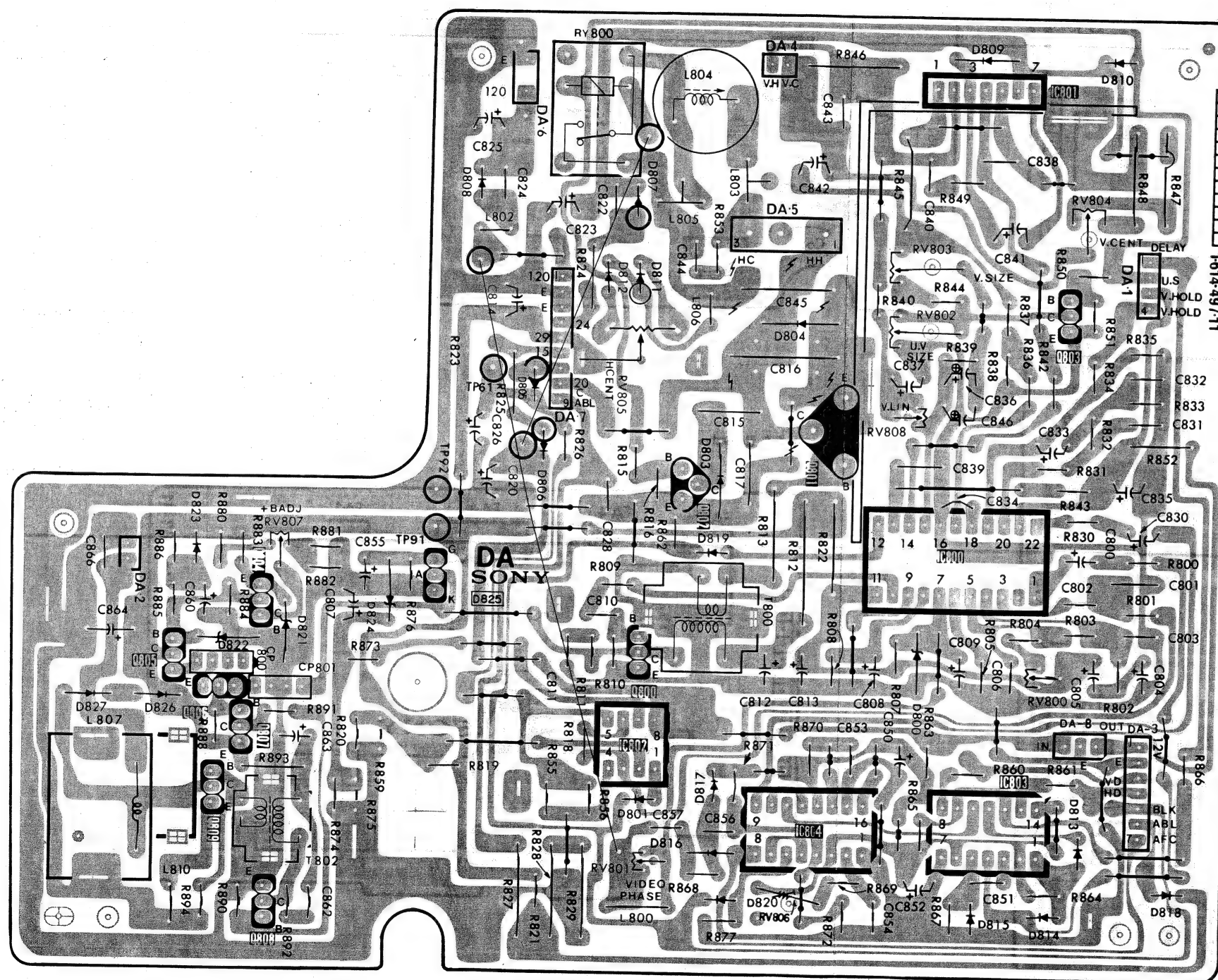


— HB Board —

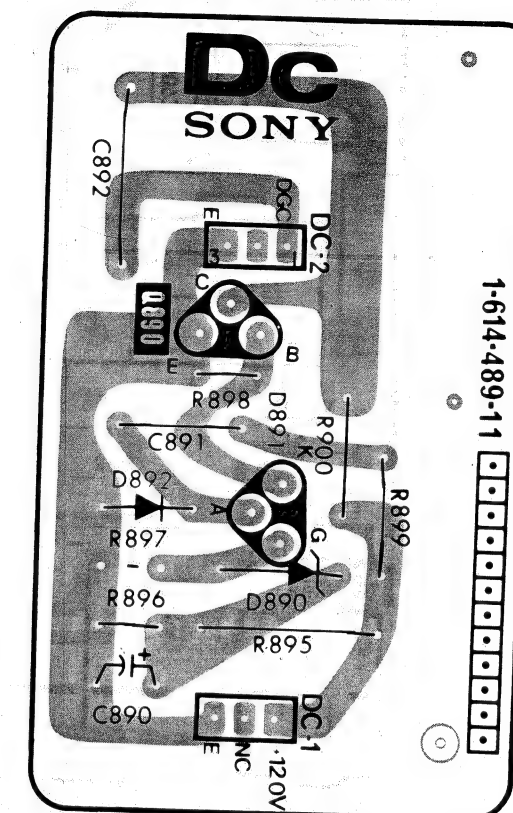


[+12V REG]

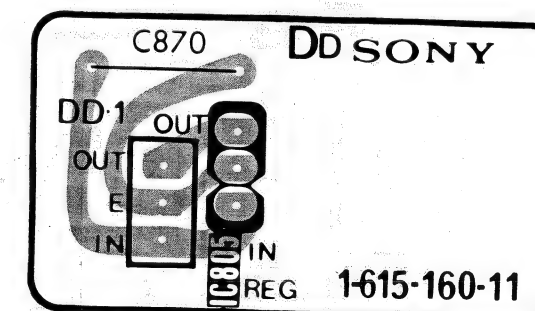
AFC, V. OUT, DHHS
H. OUT, CHOPPER OUT
DELAY SW DELAY PULSE

[illegible]

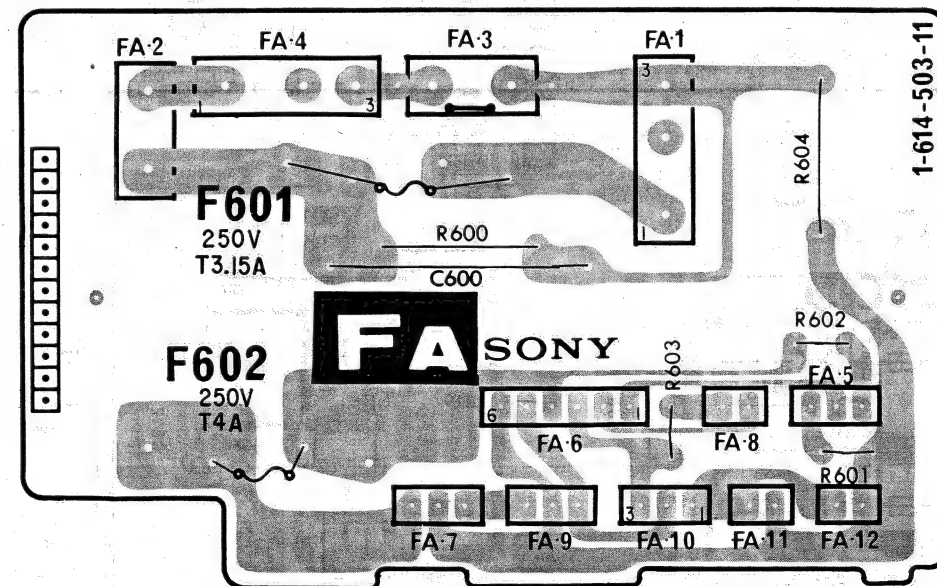
— DC Board —



- DD Board -



[CHARGER]



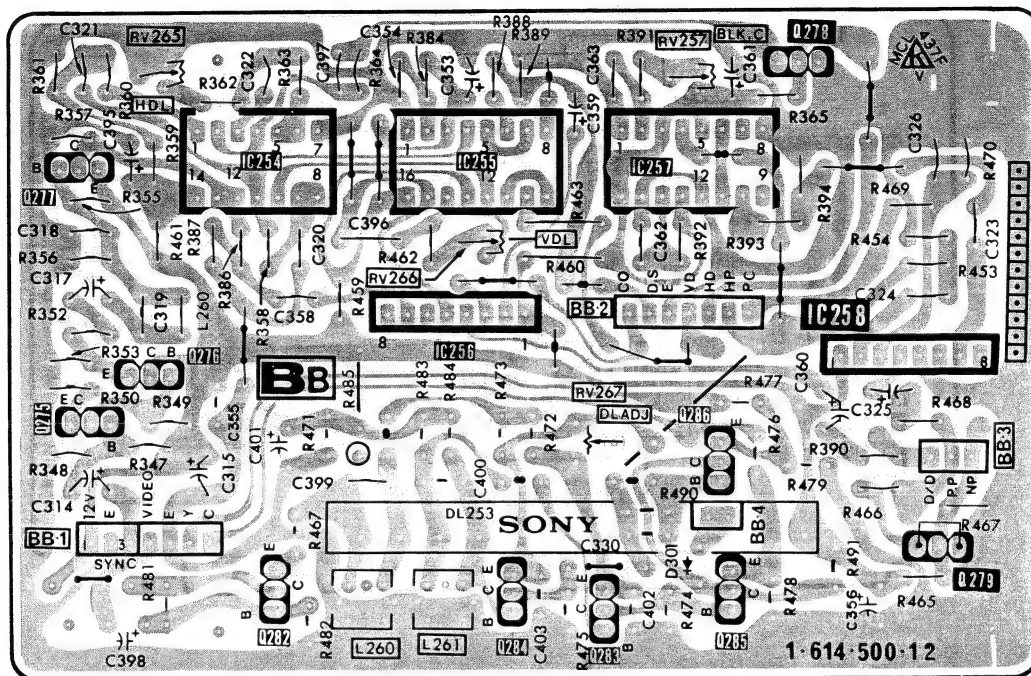
[H/V MM, H MM
SYNC, H-P, L-P SW]

BB

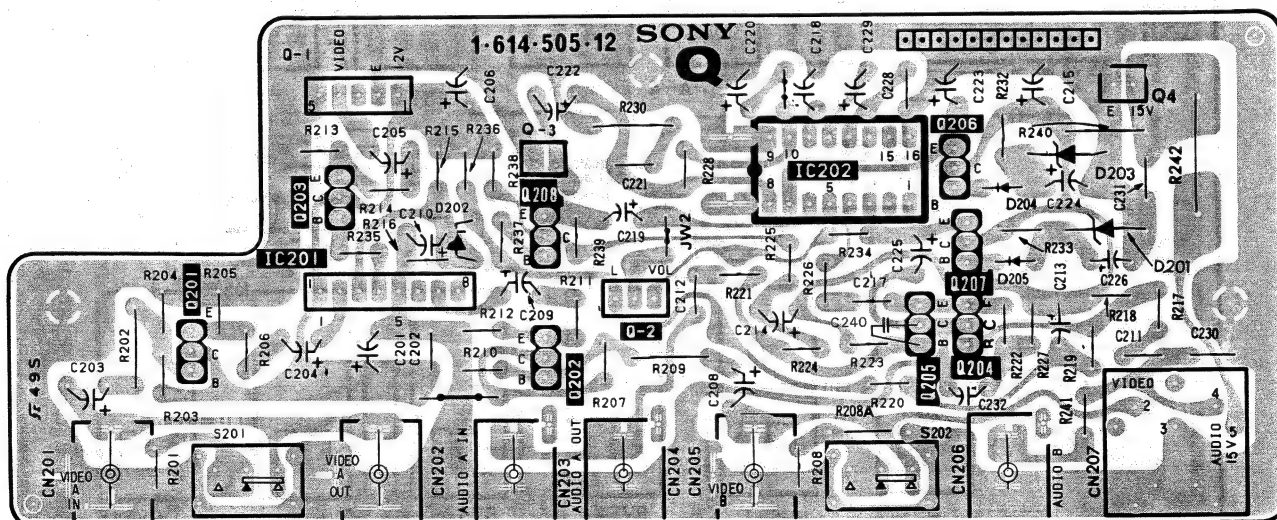
[VIDEO SWITCH
AUDIO OUT]

Q

— BB Board —



— Q Board —



DB

[F. B. T.]

HA

[CUSTOMER
CONTROL]

1

2

3

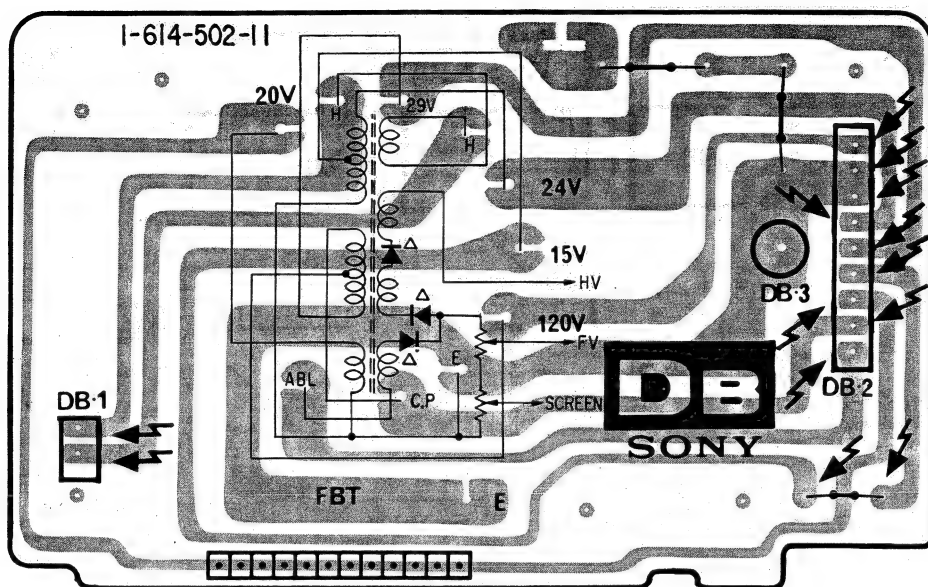
4

5

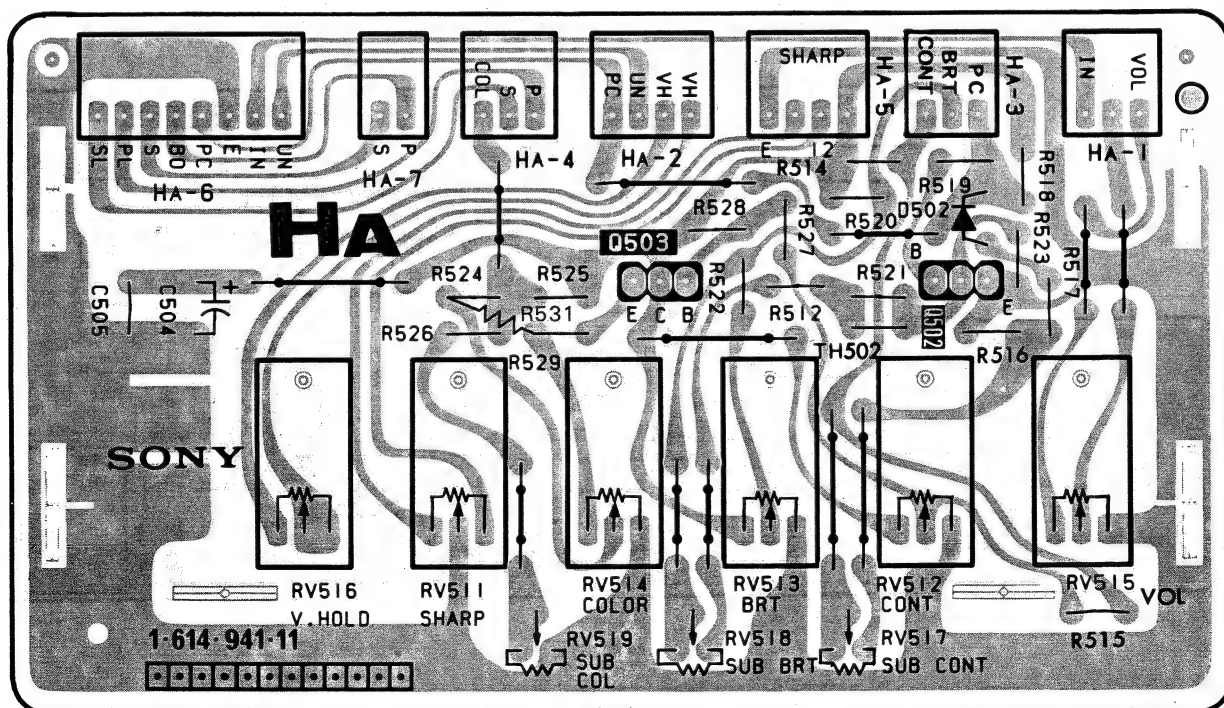
6

7

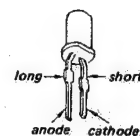
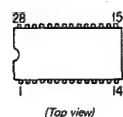
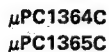
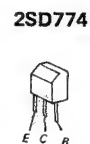
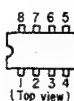
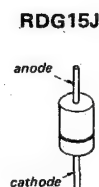
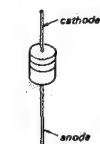
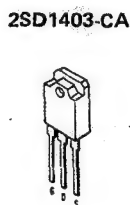
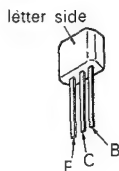
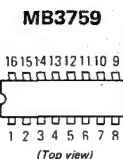
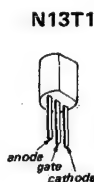
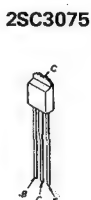
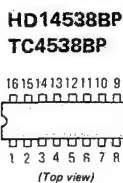
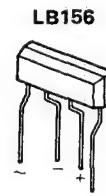
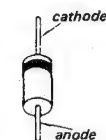
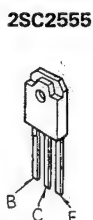
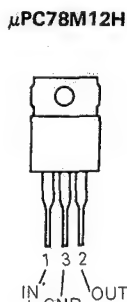
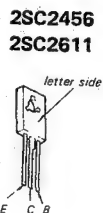
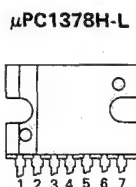
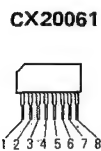
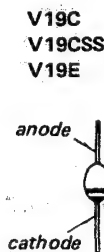
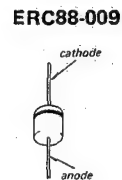
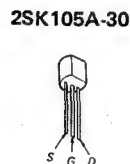
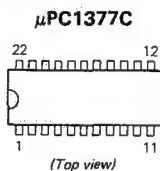
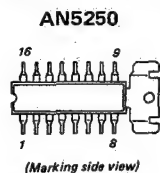
— DB Board —



— HA Board —



4-6. SEMICONDUCTORS



SECTION 5 EXPLODED VIEWS

NOTE:

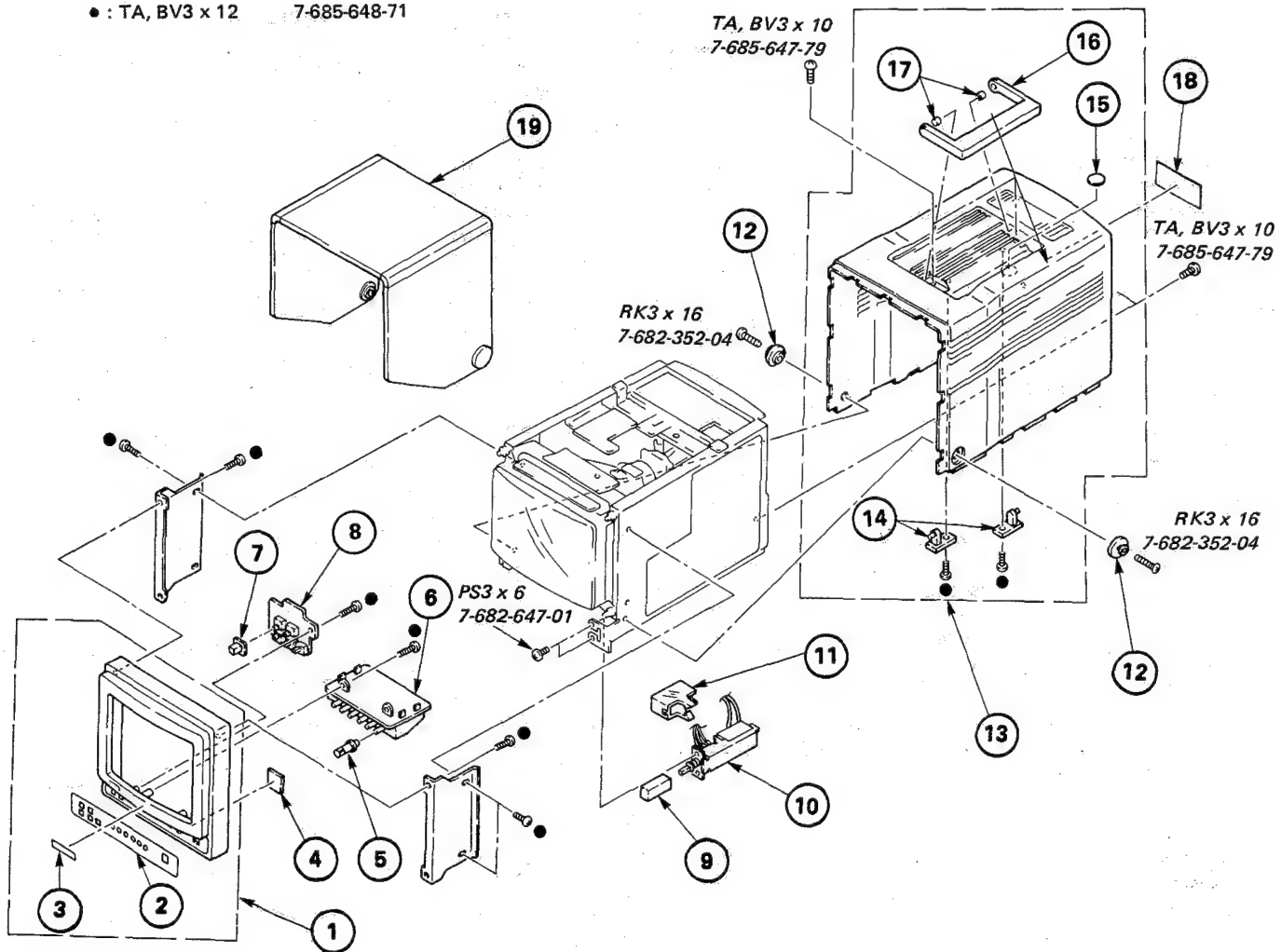
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

5-1. BEZEL, CABINET

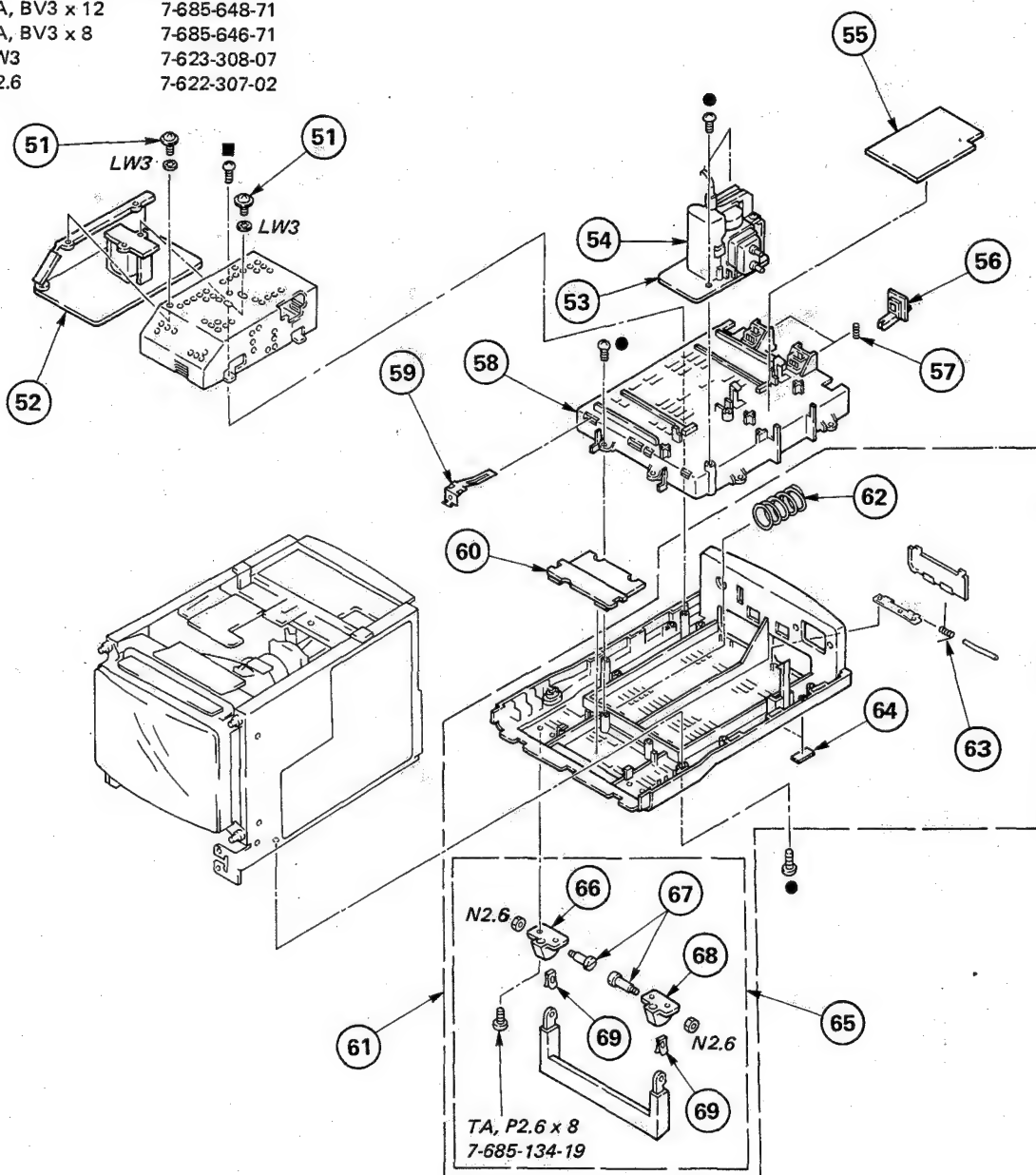
• : TA, BV3 x 12 7-685-648-71



| No. | Part No. | Description | Remark | No. | Part No. | Description | Remark |
|-----|-----------------------|--------------------------------|--------|-----|---------------|-----------------------------|--------|
| 1 | X-4374-805-2 | BEZEL ASSY | 2,3 | 11 | *4-374-825-01 | COVER, SWITCH | |
| 2 | 4-374-830-11 | LABEL, CONTROL | | 12 | 3-888-404-11 | SHAFT, BELT | |
| 3 | 3-566-707-11 | EMBLEM, SONY | | 13 | X-4374-807-1 | CABINET ASSY | 14-17 |
| 4 | *1-614-496-11 | XA BOARD | | 14 | *4-361-411-01 | SHAFT, HANDLE | |
| 5 | 4-374-820-01 | KNOB, CONTROL | | 15 | 9-911-840-XX | SPACER, SIDE | |
| 6 | *1-614-941-11 | HA BOARD | | 16 | 4-361-428-21 | HANDLE | |
| 7 | 4-369-627-11 | PUSH BUTTON | | 17 | *4-361-410-00 | SPACER, HANDLE | |
| 8 | *1-614-942-11 | HB BOARD | | 18 | *4-374-847-01 | LABEL, MODEL NUMBER (LARGE) | |
| 9 | 4-374-839-01 | BUTTON (A) | | 19 | 4-374-831-01 | HOOD (VF-501) | |
| 10 | Δ 1-570-201-11 | SWITCH, PUSH (AC POWER)(1 KEY) | | | | | |

5-2. BOTTOM CABINET

- : TA, BV3 x 12 7-685-648-71
- : TA, BV3 x 8 7-685-646-71
- LW3 7-623-308-07
- N2.6 7-622-307-02

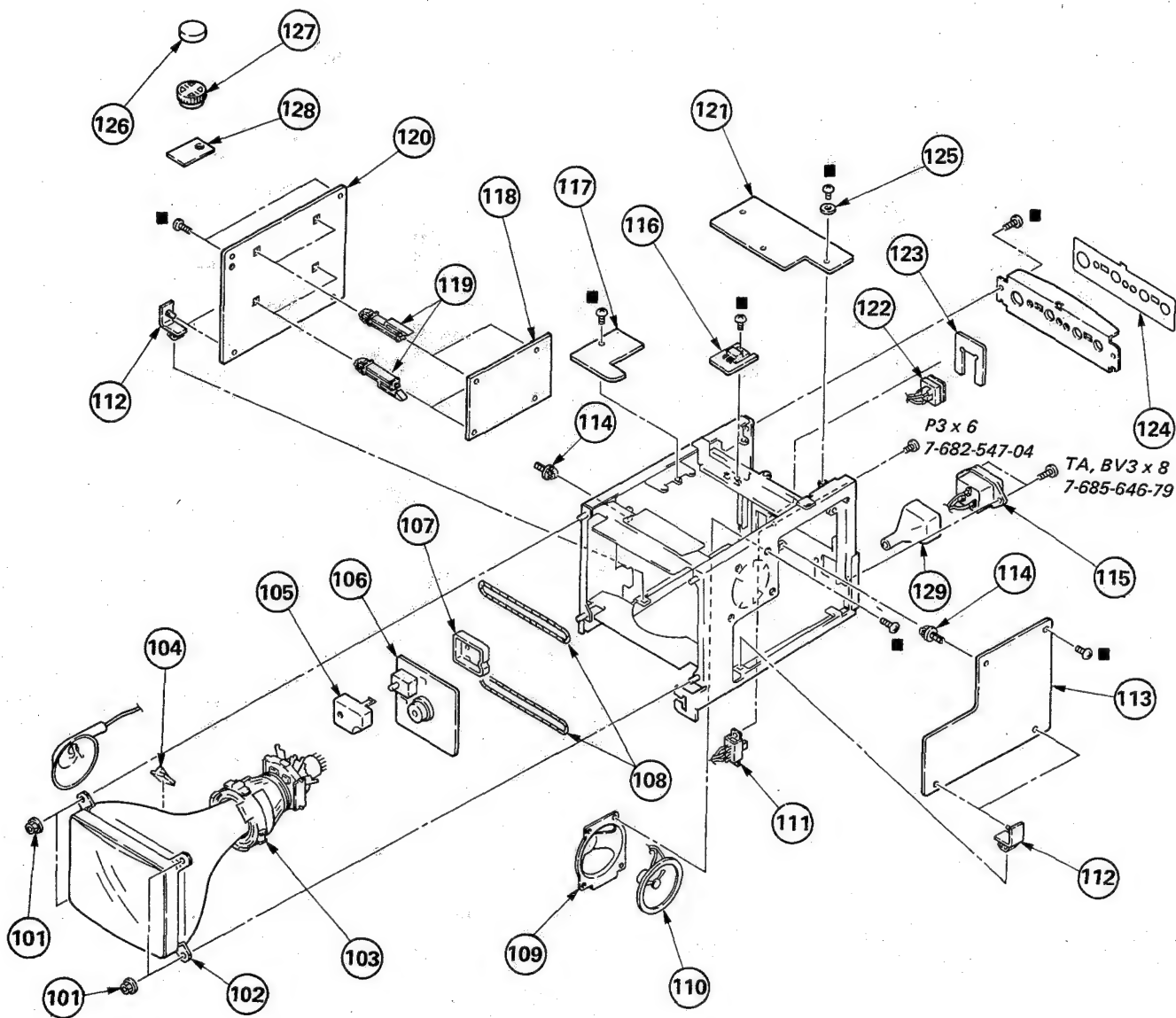


| No. | Part No. | Description | Remark | No. | Part No. | Description | Remark |
|-----|---------------|---------------------------|--------|-----|--------------|----------------------|--------|
| 51 | 3-701-809-31 | SCREW, TERMINAL (M3X8) | | 61 | X-4374-806-1 | CABINET ASSY, BOTTOM | 62-69 |
| 52 | *A-1245-263-A | FB BOARD, COMPLETE | | 62 | 3-669-594-00 | SPRING, COMPRESSION | |
| 53 | *1-615-502-11 | DB BOARD | | 63 | 3-669-592-00 | SPRING (A), TORSION | |
| 54 | ▲1-439-358-11 | TRANSFORMER ASSY, FLYBACK | | 64 | 9-911-852-XX | CUSHION | |
| 55 | *1-614-503-11 | FA BOARD | | 65 | X-4374-802-1 | LEG ASSY | 66-69 |
| 56 | 3-686-028-01 | BUTTON, SLIDE | | 66 | 4-002-791-00 | BRACKET (RIGHT), LEG | |
| 57 | 4-876-347-01 | SPRING, COMPRESSION | | 67 | 4-002-789-00 | SCREW | |
| 58 | *4-374-835-01 | HOLDER, BATTERY | | 68 | 4-002-790-00 | BRACKET (LEFT), LEG | |
| 59 | 3-669-526-00 | TERMINAL | | 69 | 4-002-732-02 | SPRING | |
| 60 | *1-614-504-11 | FC BOARD | | | | | |

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

5-3. CHASSIS

■ : TA, BV3 x 8 7-685-646-71



| No. | Part No. | Description | Remark | No. | Part No. | Description | Remark |
|-----|----------------|--------------------------|--------|-----|---------------|-------------------------------------|--------|
| 101 | 4-304-511-00 | NUT, FLANGE | | 116 | *1-615-160-11 | DD BOARD | |
| 102 | ▲ 8-737-151-05 | CRT (A20JKU10X) | | 117 | *1-614-498-11 | DC BOARD | |
| 103 | ▲ 1-451-265-11 | DEFLECTION YOKE (SY-167) | | 118 | *A-1135-296-A | BB BOARD, COMPLETE | |
| 104 | 4-309-369-00 | SPACER, DEFLECTION YOKE | | 119 | *3-657-516-00 | SUPPORT, PC BOARD | |
| 105 | *4-374-822-01 | COVER (A), CONTROL | | 120 | *A-1135-295-A | BA BOARD, COMPLETE | |
| 106 | *A-1330-584-A | C BOARD, COMPLETE | | 121 | *A-1270-160-A | Q BOARD, COMPLETE | |
| 107 | *4-374-806-01 | COVER (B), CONTROL | | 122 | 1-507-465-00 | JACK, POWER OUTSIDE | |
| 108 | ▲ 1-426-043-12 | COIL, DEGAUSSING | | 123 | *4-374-801-01 | STOPPER, JACK, DC | |
| 109 | *4-344-240-00 | BRACKET, SPEAKER | | 124 | 4-374-829-01 | LABEL, PANEL | |
| 110 | 1-502-509-00 | SPEAKER | | 125 | 4-308-030-00 | WASHER | |
| 111 | ▲ 1-516-046-11 | SWITCH, SLIDE | | 126 | 1-452-032-00 | MAGNET, DISK; 10MM ϕ | |
| 112 | *3-701-832-00 | HINGE, CIRCUIT BOARD | | 127 | 1-452-094-00 | MAGNET, ROTATABLE DISK; 15MM ϕ | |
| 113 | *A-1345-522-A | DA BOARD, COMPLETE | | 128 | 1-452-126-11 | MAGNET | |
| 114 | *4-303-473-00 | SUPPORT, PC | | 129 | *4-601-466-11 | COVER, 3P INLET | |
| 115 | ▲ 1-509-547-11 | 3P INLET | | | | | |

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

SECTION 6 ELECTRICAL PARTS LIST

BA

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

• Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

CAPACITORS
• MF : μ F, PF : μ PF

RESISTORS
• All resistors are in ohms
• F : nonflammable

COILS
• MMH : mH, UH : μ H

| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark |
|---------|---------------|-----------------------------|-----------|---------|--------------|-------------|------------------|
| | *A-1135-295-A | BA BOARD, COMPLETE ***** | | C289 | 1-123-608-00 | ELECT | 0.22MF 20% 50V |
| | | CONNECTOR | | C290 | 1-123-607-00 | ELECT | 0.1MF 20% 50V |
| BA1 | *1-564-441-11 | PLUG, CONNECTOR (2.5MM) 5P | | C291 | 1-123-608-00 | ELECT | 0.22MF 20% 50V |
| BA2 | *1-564-440-11 | PLUG, CONNECTOR (2.5MM) 4P | | C292 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| BA4 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P | | C293 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| BA5 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P | | C294 | 1-161-313-00 | CERAMIC | 150PF 10% 50V |
| BA6 | *1-564-442-11 | PLUG, CONNECTOR (2.5MM) 6P | | C295 | 1-102-937-00 | CERAMIC | 4PF 0.5PF 50V |
| BA7 | *1-564-443-11 | PLUG, CONNECTOR (2.5MM) 7P | | C296 | 1-123-332-00 | ELECT | 47MF 20% 25V |
| BA8 | *1-564-443-11 | PLUG, CONNECTOR (2.5MM) 7P | | C297 | 1-101-006-21 | CERAMIC | 0.047MF 50V |
| BA9 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P | | C298 | 1-123-356-00 | ELECT | 10MF 20% 16V |
| BA10 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P | | C299 | 1-102-678-00 | CERAMIC | 100PF 5% 50V |
| BA11 | *1-564-354-21 | PLUG, CONNECTOR (2.5MM) 3P | | C300 | 1-101-006-21 | CERAMIC | 0.047MF 50V |
| BA12 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P | | C301 | 1-101-004-00 | CERAMIC | 0.01MF 50V |
| | | CAPACITOR | | C302 | 1-101-004-00 | CERAMIC | 0.01MF 50V |
| C251 | 1-102-953-00 | CERAMIC 18PF | 5% 50V | C303 | 1-101-004-00 | CERAMIC | 0.01MF 50V |
| C253 | 1-123-333-00 | ELECT 100MF | 20% 25V | C304 | 1-102-965-00 | CERAMIC | 39PF 5% 50V |
| C254 | 1-101-004-00 | CERAMIC 0.01MF | 50V | C305 | 1-102-937-00 | CERAMIC | 4PF 0.5PF 50V |
| C255 | 1-102-662-00 | CERAMIC 7PF | 0.5PF 50V | C306 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| C256 | 1-102-662-00 | CERAMIC 7PF | 0.5PF 50V | C307 | 1-131-368-00 | TANTALUM | 3.3MF 10% 16V |
| C257 | 1-102-662-00 | CERAMIC 7PF | 0.5PF 50V | C308 | 1-123-356-00 | ELECT | 10MF 20% 16V |
| C258 | 1-102-662-00 | CERAMIC 7PF | 0.5PF 50V | C309 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| C259 | 1-123-318-00 | ELECT 33MF | 20% 16V | C310 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| C260 | 1-101-361-00 | CERAMIC 150PF | 5% 50V | C311 | 1-123-380-00 | ELECT | 1MF 20% 50V |
| C261 | 1-123-380-00 | ELECT 1MF | 20% 50V | C312 | 1-101-006-21 | CERAMIC | 0.047MF 50V |
| C262 | 1-102-973-00 | CERAMIC 100PF | 5% 50V | C313 | 1-123-333-00 | ELECT | 100MF 20% 25V |
| C263 | 1-123-819-00 | ELECT 33MF | 20% 25V | C323 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| C264 | 1-101-006-21 | CERAMIC 0.047MF | 50V | C326 | 1-101-880-00 | CERAMIC | 47PF 5% 50V |
| C265 | 1-101-004-00 | CERAMIC 0.01MF | 50V | C327 | 1-102-944-00 | CERAMIC | 7PF 0.5PF 50V |
| C267 | 1-101-004-00 | CERAMIC 0.01MF | 50V | C328 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| C268 | 1-101-004-00 | CERAMIC 0.01MF | 50V | C329 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| C269 | 1-123-318-00 | ELECT 33MF | 20% 16V | C330 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| C270 | 1-102-129-21 | CERAMIC 0.01MF | 10% 50V | C331 | 1-101-880-00 | CERAMIC | 47PF 5% 50V |
| C271 | 1-102-129-21 | CERAMIC 0.01MF | 10% 50V | C332 | 1-101-880-00 | CERAMIC | 47PF 5% 50V |
| C272 | 1-101-006-21 | CERAMIC 0.047MF | 50V | C333 | 1-102-938-00 | CERAMIC | 1PF 0.5PF 50V |
| C273 | 1-102-679-00 | CERAMIC 120PF | 5% 50V | C334 | 1-102-963-00 | CERAMIC | 33PF 5% 50V |
| C274 | 1-121-257-00 | ELECT 4.7MF | 16V | C335 | 1-123-607-00 | ELECT | 0.1MF 20% 50V |
| C275 | 1-121-257-00 | ELECT 4.7MF | 16V | C336 | 1-123-380-00 | ELECT | 1MF 20% 50V |
| C276 | 1-101-361-00 | CERAMIC 150PF | 5% 50V | C340 | 1-101-006-21 | CERAMIC | 0.047MF 50V |
| C277 | 1-101-361-00 | CERAMIC 150PF | 5% 50V | C343 | 1-123-356-00 | ELECT | 10MF 20% 25V |
| C278 | 1-102-971-00 | CERAMIC 82PF | 5% 50V | C344 | 1-123-379-00 | ELECT | 0.47MF 20% 50V |
| C279 | 1-102-971-00 | CERAMIC 82PF | 5% 50V | C345 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| C280 | 1-123-333-00 | ELECT 100MF | 20% 25V | C346 | 1-102-963-00 | CERAMIC | 33PF 5% 50V |
| C281 | 1-101-006-21 | CERAMIC 0.047MF | 50V | C347 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| C282 | 1-102-892-00 | CERAMIC 22PF | 5% 50V | C348 | 1-106-212-00 | MYLAR | 0.047MF 10% 100V |
| C284 | 1-106-220-00 | MYLAR 0.1MF | 10% 100V | C349 | 1-106-212-00 | MYLAR | 0.047MF 10% 100V |
| C285 | 1-102-892-00 | CERAMIC 22PF | 5% 50V | C350 | 1-123-381-00 | ELECT | 2.2MF 20% 50V |
| C286 | 1-123-379-00 | ELECT 0.47MF | 20% 50V | C351 | 1-123-369-00 | ELECT | 4.7MF 20% 50V |
| C287 | 1-123-381-00 | ELECT 2.2MF | 20% 50V | C352 | 1-123-380-00 | ELECT | 1MF 20% 50V |
| C288 | 1-123-380-00 | ELECT 1MF | 20% 50V | C355 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| | | | | C366 | 1-123-382-00 | ELECT | 3.3MF 20% 50V |
| | | | | C367 | 1-101-004-00 | CERAMIC | 0.01MF 50V |
| | | | | C368 | 1-102-129-21 | CERAMIC | 0.01MF 10% 50V |
| | | | | C369 | 1-123-333-00 | ELECT | 100MF 20% 25V |

BA

| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark |
|-------------------|--------------|-----------------------|---------|-----------------|--------------|-----------------------|--------|
| C370 | 1-123-356-00 | ELECT 10MF | 20% 25V | Q266 | 8-729-115-30 | TRANSISTOR 2SK105A-30 | |
| C381 | 1-123-333-00 | ELECT 100MF | 20% 25V | Q267 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| C382 | 1-102-129-21 | CERAMIC 0.01MF | 10% 50V | Q268 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| C386 | 1-102-820-00 | CERAMIC 330PF | 5% 50V | Q269 | 8-729-204-83 | TRANSISTOR 2SA1048GR | |
| C387 | 1-102-820-00 | CERAMIC 330PF | 5% 50V | Q270 | 8-729-603-50 | TRANSISTOR 2SC403SP | |
| C388 | 1-102-820-00 | CERAMIC 330PF | 5% 50V | Q271 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| <u>DIODE</u> | | | | Q272 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| D251 | 8-719-911-19 | DIODE 1SS119 | | Q273 | 8-729-603-50 | TRANSISTOR 2SC403SP | |
| D252 | 8-719-911-19 | DIODE 1SS119 | | Q274 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| D253 | 8-719-911-19 | DIODE 1SS119 | | Q279 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| D254 | 8-719-911-19 | DIODE 1SS119 | | <u>RESISTOR</u> | | | |
| D255 | 8-719-911-19 | DIODE 1SS119 | | R251 | 1-247-867-00 | CARBON 33K 5% 1/6W | |
| D257 | 8-719-911-19 | DIODE 1SS119 | | R252 | 1-247-851-00 | CARBON 6.8K 5% 1/6W | |
| D258 | 8-719-911-19 | DIODE 1SS119 | | R253 | 1-247-825-00 | CARBON 560 5% 1/6W | |
| D259 | 8-719-911-19 | DIODE 1SS119 | | R254 | 1-247-833-00 | CARBON 1.2K 5% 1/6W | |
| <u>DELAY LINE</u> | | | | R257 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| DL251 | 1-415-330-00 | DELAY LINE, Y | | R259 | 1-247-835-00 | CARBON 1.5K 5% 1/6W | |
| DL252 | 1-415-122-31 | DELAY LINE, 1H (PAL) | | R260 | 1-247-835-00 | CARBON 1.5K 5% 1/6W | |
| <u>IC</u> | | | | R261 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| IC251 | 8-752-006-10 | IC CX20061 | | R262 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| IC252 | 8-759-100-15 | IC UPC1364C | | R263 | 1-247-819-00 | CARBON 330 5% 1/6W | |
| IC253 | 8-759-113-65 | IC UPC1365C | | R264 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| <u>COIL</u> | | | | R265 | 1-247-867-00 | CARBON 33K 5% 1/6W | |
| L252 | 1-409-193-00 | COIL 3.58MHZ TRAP | | R266 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| L253 | 1-409-193-00 | COIL 3.58MHZ TRAP | | R267 | 1-247-819-00 | CARBON 330 5% 1/6W | |
| L254 | 1-408-418-00 | MICRO INDUCTOR 56UH | | R268 | 1-247-867-00 | CARBON 33K 5% 1/6W | |
| L255 | 1-408-408-00 | MICRO INDUCTOR 8.2UH | | R269 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| L256 | 1-408-418-00 | MICRO INDUCTOR 56UH | | R270 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| L257 | 1-408-416-00 | MICRO INDUCTOR 39UH | | R271 | 1-247-807-00 | CARBON 100 5% 1/6W | |
| L258 | 1-408-406-00 | MICRO INDUCTOR 5.6UH | | R272 | 1-247-835-00 | CARBON 1.5K 5% 1/6W | |
| L262 | 1-408-414-00 | MICRO INDUCTOR 27UH | | R273 | 1-247-807-00 | CARBON 100 5% 1/6W | |
| <u>TRANSISTOR</u> | | | | R274 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| Q251 | 8-729-603-50 | TRANSISTOR 2SC403SP | | R275 | 1-247-819-00 | CARBON 330 5% 1/6W | |
| Q252 | 8-729-245-83 | TRANSISTOR 2SC2458 | | R276 | 1-247-819-00 | CARBON 330 5% 1/6W | |
| Q253 | 8-729-245-83 | TRANSISTOR 2SC2458 | | R277 | 1-247-873-00 | CARBON 56K 5% 1/6W | |
| Q254 | 8-729-245-83 | TRANSISTOR 2SC2458 | | R278 | 1-247-877-00 | CARBON 82K 5% 1/6W | |
| Q255 | 8-729-245-83 | TRANSISTOR 2SC2458 | | R279 | 1-247-807-00 | CARBON 100 5% 1/6W | |
| Q256 | 8-729-245-83 | TRANSISTOR 2SC2458 | | R280 | 1-247-861-00 | CARBON 18K 5% 1/6W | |
| Q257 | 8-729-603-50 | TRANSISTOR 2SC403SP | | R281 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| Q258 | 8-729-204-83 | TRANSISTOR 2SA1048GR | | R282 | 1-247-807-00 | CARBON 100 5% 1/6W | |
| Q259 | 8-729-245-83 | TRANSISTOR 2SC2458 | | R283 | 1-247-867-00 | CARBON 33K 5% 1/6W | |
| Q260 | 8-729-245-83 | TRANSISTOR 2SC2458 | | R284 | 1-247-867-00 | CARBON 33K 5% 1/6W | |
| Q261 | 8-729-204-83 | TRANSISTOR 2SA1048GR | | R285 | 1-247-879-00 | CARBON 100K 5% 1/6W | |
| Q262 | 8-729-204-83 | TRANSISTOR 2SA1048GR | | R286 | 1-247-815-00 | CARBON 220 5% 1/6W | |
| Q263 | 8-729-245-83 | TRANSISTOR 2SC2458 | | R287 | 1-247-815-00 | CARBON 220 5% 1/6W | |
| Q264 | 8-729-245-83 | TRANSISTOR 2SC2458 | | R288 | 1-247-807-00 | CARBON 100 5% 1/6W | |
| Q265 | 8-729-115-30 | TRANSISTOR 2SK105A-30 | | R289 | 1-247-823-00 | CARBON 470 5% 1/6W | |
| | | | | R290 | 1-247-821-00 | CARBON 390 5% 1/6W | |
| | | | | R291 | 1-247-827-00 | CARBON 680 5% 1/6W | |
| | | | | R292 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | |
| | | | | R293 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | |

| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark |
|---------|--------------|-------------|--------------|---------|--------------|-------------|--------------|
| R294 | 1-247-815-00 | CARBON | 220 5% 1/6W | R377 | 1-247-835-00 | CARBON | 1.5K 5% 1/6W |
| R295 | 1-247-815-00 | CARBON | 220 5% 1/6W | R378 | 1-247-887-00 | CARBON | 220K 5% 1/6W |
| R296 | 1-247-847-00 | CARBON | 4.7K 5% 1/6W | R380 | 1-247-879-00 | CARBON | 100K 5% 1/6W |
| R297 | 1-247-815-00 | CARBON | 220 5% 1/6W | R381 | 1-247-863-00 | CARBON | 22K 5% 1/6W |
| R298 | 1-247-133-00 | CARBON | 1.2K 5% 1/4W | R382 | 1-247-867-00 | CARBON | 33K 5% 1/6W |
| R299 | 1-247-819-00 | CARBON | 330 5% 1/6W | R383 | 1-247-831-00 | CARBON | 1K 5% 1/6W |
| R300 | 1-247-879-00 | CARBON | 100K 5% 1/6W | R395 | 1-247-857-00 | CARBON | 12K 5% 1/6W |
| R301 | 1-247-879-00 | CARBON | 100K 5% 1/6W | R396 | 1-247-863-00 | CARBON | 22K 5% 1/6W |
| R302 | 1-247-145-00 | CARBON | 3.9K 5% 1/4W | R397 | 1-247-823-00 | CARBON | 470 5% 1/6W |
| R303 | 1-247-115-00 | CARBON | 220 5% 1/4W | R398 | 1-247-831-00 | CARBON | 1K 5% 1/6W |
| R304 | 1-247-115-00 | CARBON | 220 5% 1/4W | R399 | 1-249-421-11 | CARBON | 2.2K 5% 1/6W |
| R305 | 1-247-853-00 | CARBON | 8.2K 5% 1/6W | R400 | 1-247-865-00 | CARBON | 27K 5% 1/6W |
| R306 | 1-247-853-00 | CARBON | 8.2K 5% 1/6W | R401 | 1-247-865-00 | CARBON | 27K 5% 1/6W |
| R307 | 1-247-843-00 | CARBON | 3.3K 5% 1/6W | R402 | 1-247-877-00 | CARBON | 82K 5% 1/6W |
| R308 | 1-247-853-00 | CARBON | 8.2K 5% 1/6W | R403 | 1-247-847-00 | CARBON | 4.7K 5% 1/6W |
| R309 | 1-247-867-00 | CARBON | 33K 5% 1/6W | R406 | 1-247-821-00 | CARBON | 390 5% 1/6W |
| R310 | 1-247-833-00 | CARBON | 1.2K 5% 1/6W | R408 | 1-247-821-00 | CARBON | 390 5% 1/6W |
| R311 | 1-247-873-00 | CARBON | 56K 5% 1/6W | R410 | 1-247-821-00 | CARBON | 390 5% 1/6W |
| R312 | 1-249-421-11 | CARBON | 2.2K 5% 1/6W | R411 | 1-247-871-00 | CARBON | 47K 5% 1/6W |
| R313 | 1-247-879-00 | CARBON | 100K 5% 1/6W | R413 | 1-247-863-00 | CARBON | 22K 5% 1/6W |
| R314 | 1-210-825-00 | SOLID | 3.3M 5% 1/4W | R414 | 1-247-867-00 | CARBON | 33K 5% 1/6W |
| R315 | 1-247-855-00 | CARBON | 10K 5% 1/6W | R420 | 1-247-171-00 | CARBON | 47K 5% 1/4W |
| R316 | 1-247-833-00 | CARBON | 1.2K 5% 1/6W | R421 | 1-247-889-00 | CARBON | 270K 5% 1/6W |
| R317 | 1-247-807-00 | CARBON | 100 5% 1/6W | R437 | 1-247-845-00 | CARBON | 3.9K 5% 1/6W |
| R318 | 1-247-831-00 | CARBON | 1K 5% 1/6W | R438 | 1-247-823-00 | CARBON | 470 5% 1/6W |
| R320 | 1-247-843-00 | CARBON | 3.3K 5% 1/6W | R439 | 1-247-791-00 | CARBON | 22 5% 1/6W |
| R321 | 1-247-811-00 | CARBON | 150 5% 1/6W | R440 | 1-247-147-00 | CARBON | 4.7K 5% 1/4W |
| R322 | 1-247-837-00 | CARBON | 1.8K 5% 1/6W | R441 | 1-247-831-00 | CARBON | 1K 5% 1/6W |
| R323 | 1-247-827-00 | CARBON | 680 5% 1/6W | R442 | 1-247-845-00 | CARBON | 3.9K 5% 1/6W |
| R324 | 1-247-831-00 | CARBON | 1K 5% 1/6W | R443 | 1-247-823-00 | CARBON | 470 5% 1/6W |
| R326 | 1-247-823-00 | CARBON | 470 5% 1/6W | R444 | 1-247-791-00 | CARBON | 22 5% 1/6W |
| R327 | 1-249-421-11 | CARBON | 2.2K 5% 1/6W | R445 | 1-247-147-00 | CARBON | 4.7K 5% 1/4W |
| R328 | 1-247-855-00 | CARBON | 10K 5% 1/6W | R446 | 1-247-831-00 | CARBON | 1K 5% 1/6W |
| R329 | 1-247-847-00 | CARBON | 4.7K 5% 1/6W | R447 | 1-247-845-00 | CARBON | 3.9K 5% 1/6W |
| R330 | 1-247-833-00 | CARBON | 1.2K 5% 1/6W | R448 | 1-247-823-00 | CARBON | 470 5% 1/6W |
| R332 | 1-247-823-00 | CARBON | 470 5% 1/6W | R449 | 1-247-791-00 | CARBON | 22 5% 1/6W |
| R333 | 1-247-815-00 | CARBON | 220 5% 1/6W | R450 | 1-247-147-00 | CARBON | 4.7K 5% 1/4W |
| R334 | 1-247-843-00 | CARBON | 3.3K 5% 1/6W | R451 | 1-247-831-00 | CARBON | 1K 5% 1/6W |
| R335 | 1-249-421-11 | CARBON | 2.2K 5% 1/6W | R452 | 1-247-847-00 | CARBON | 4.7K 5% 1/6W |
| R336 | 1-247-823-00 | CARBON | 470 5% 1/6W | R458 | 1-247-841-00 | CARBON | 2.7K 5% 1/6W |
| R337 | 1-247-827-00 | CARBON | 680 5% 1/6W | R461 | 1-247-849-00 | CARBON | 5.6K 5% 1/6W |
| R338 | 1-247-853-00 | CARBON | 8.2K 5% 1/6W | R464 | 1-247-827-00 | CARBON | 680 5% 1/6W |
| R339 | 1-247-855-00 | CARBON | 10K 5% 1/6W | R465 | 1-247-867-00 | CARBON | 33K 5% 1/6W |
| R340 | 1-249-421-11 | CARBON | 2.2K 5% 1/6W | | | | |
| R341 | 1-247-807-00 | CARBON | 100 5% 1/6W | | | | |
| R342 | 1-247-807-00 | CARBON | 100 5% 1/6W | | | | |
| R343 | 1-247-883-00 | CARBON | 150K 5% 1/6W | | | | |
| R344 | 1-247-855-00 | CARBON | 10K 5% 1/6W | | | | |
| R345 | 1-247-843-00 | CARBON | 3.3K 5% 1/6W | | | | |
| R346 | 1-247-791-00 | CARBON | 22 5% 1/6W | | | | |
| R374 | 1-247-823-00 | CARBON | 470 5% 1/6W | | | | |
| R375 | 1-247-827-00 | CARBON | 680 5% 1/6W | | | | |
| R376 | 1-247-831-00 | CARBON | 1K 5% 1/6W | | | | |

VARIABLE RESISTOR

| | | | |
|-------|--------------|--------------------------|------|
| RV251 | 1-228-719-00 | RES, ADJ, CERAMIC CARBON | 470 |
| RV252 | 1-228-723-00 | RES, ADJ, CERAMIC CARBON | 4.7K |
| RV253 | 1-228-719-00 | RES, ADJ, CERAMIC CARBON | 470 |
| RV255 | 1-228-722-00 | RES, ADJ, CERAMIC CARBON | 3.3K |
| RV256 | 1-228-725-00 | RES, ADJ, CERAMIC CARBON | 22K |
| RV258 | 1-224-660-21 | RES, ADJ, METAL FILM | 1K |
| RV259 | 1-224-493-00 | RES, ADJ, METAL FILM | 10K |
| RV260 | 1-224-660-21 | RES, ADJ, METAL FILM | 1K |

—56—

BB

FC

FA

| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark |
|---------|---------------|----------------------------|--------|---------|---------------|-------------------------|----------------------------|
| R460 | 1-246-463-25 | CARBON 390 5% 1/4W | | Q672 | 8-729-204-83 | TRANSISTOR 2SA1048GR | |
| R461 | 1-247-831-00 | CARBON 1K 5% 1/6W | | | | RESISTOR | |
| R462 | 1-247-879-00 | CARBON 100K 5% 1/6W | | R660 | 1-212-361-00 | METAL OXIDE 1.2 5% 1W F | |
| R463 | 1-247-107-00 | CARBON 100 5% 1/4W | | R661 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| R465 | 1-249-421-11 | CARBON 2.2K 5% 1/6W | | R662 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| R466 | 1-247-863-00 | CARBON 22K 5% 1/6W | | R664 | 1-249-421-11 | CARBON 2.2K 5% 1/6W | |
| R467 | 1-247-852-00 | CARBON 7.5K 5% 1/6W | | R665 | 1-247-819-00 | CARBON 330 5% 1/6W | |
| R468 | 1-247-815-00 | CARBON 220 5% 1/6W | | R670 | 1-212-361-00 | METAL OXIDE 1.2 5% 1W F | |
| R469 | 1-247-873-00 | CARBON 56K 5% 1/6W | | R671 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| R470 | 1-247-879-00 | CARBON 100K 5% 1/6W | | R672 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| R490 | 1-247-857-00 | CARBON 12K 5% 1/6W | | R674 | 1-249-421-11 | CARBON 2.2K 5% 1/6W | |
| R491 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | | R675 | 1-247-819-00 | CARBON 330 5% 1/6W | |
| | | VARIABLE RESISTOR | | | | ***** | |
| RV257 | 1-226-775-00 | RES. ADJ. METAL GLAZE 100K | | | *1-614-503-11 | FA BOARD | |
| RV265 | 1-226-773-00 | RES. ADJ. METAL GLAZE 22K | | | | ***** | |
| RV266 | 1-226-775-00 | RES. ADJ. METAL GLAZE 100K | | | | CAPACITOR | |
| | | ***** | | | | | |
| | *1-614-504-11 | FC BOARD | | | C600 | 1-130-712-00 | FILM 0.47MF 20% 250V |
| | | ***** | | | | *4-316-137-00 | COVER, CAPACITOR; C660 |
| | 3-618-225-00 | NUT, PLATE | | | | FUSE | |
| | *4-026-251-00 | SPACER, INSULATING | | | F601 | 1-532-237-11 | FUSE, TIME-LAG T3.15A/250V |
| | 4-313-734-00 | BUSHING TR, Y | | | | 1-533-087-00 | HOLDER, FUSE; F601 |
| | | CAPACITOR | | | F602 | 1-532-350-11 | FUSE, TIME-LAG T4A/250V |
| | | | | | | 1-533-087-00 | HOLDER, FUSE; F602 |
| C660 | 1-161-047-00 | CERAMIC 0.0047MF 10% 25V | | | | CONNECTOR | |
| C670 | 1-161-047-00 | CERAMIC 0.0047MF 10% 25V | | | FA1 | *1-508-765-00 | 3P PLUG (M) |
| | | DIODE | | | FA2 | *1-508-786-00 | 2P PLUG (M) |
| D660 | 8-719-102-84 | DIODE RD8.2E-N2 | | | FA3 | *1-508-786-00 | 2P PLUG (M) |
| D661 | 8-719-102-90 | DIODE RD10E-N2 | | | FA4 | *1-508-765-00 | 3P PLUG (M) |
| D662 | 8-719-911-19 | DIODE 1SS119 | | | FA5 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P |
| D663 | 8-719-911-55 | DIODE U05G | | | FA6 | *1-564-442-11 | PLUG, CONNECTOR (2.5MM) 6P |
| D664 | 8-719-920-40 | DIODE ESAC82-004 | | | FA7 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P |
| D670 | 8-719-102-84 | DIODE RD8.2E-N2 | | | FA8 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P |
| D671 | 8-719-102-90 | DIODE RD10E-N2 | | | FA9 | *1-564-354-21 | PLUG, CONNECTOR (2.5MM) 3P |
| D672 | 8-719-911-19 | DIODE 1SS119 | | | FA10 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P |
| D673 | 8-719-911-55 | DIODE U05G | | | FA11 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P |
| | | CONNECTOR | | | FA12 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P |
| FC1 | *1-564-354-21 | PLUG, CONNECTOR (2.5MM) 3P | | | | RESISTOR | |
| FC2 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P | | | R600 | 1-202-724-00 | SOLID 2.7M 10% 1/2W |
| FC3 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P | | | R601 | 1-247-824-00 | CARBON 510 5% 1/6W |
| FC4 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P | | | R602 | 1-247-831-00 | CARBON 1K 5% 1/6W |
| | | TRANSISTOR | | | R603 | 1-247-837-00 | CARBON 1.8K 5% 1/6W |
| Q660 | 8-729-313-42 | TRANSISTOR 2SD1134 | | | R604 | 1-247-289-00 | CARBON 8.2M 5% 1W |
| Q661 | 8-729-204-83 | TRANSISTOR 2SA1048GR | | | | | |
| Q662 | 8-729-204-83 | TRANSISTOR 2SA1048GR | | | | | |
| Q670 | 8-729-313-42 | TRANSISTOR 2SD1134 | | | | | |
| Q671 | 8-729-204-83 | TRANSISTOR 2SA1048GR | | | | | |

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

FB

| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark |
|---------------|----------------|-------------------------------|--------|------------|---------------|----------------------------|--------|
| *A-1245-263-A | | FB BOARD, COMPLETE ***** | | D624 | 8-719-911-19 | DIODE 1SS119 | |
| *2-430-232-00 | | INSULATOR (SR12E), TRANSISTOR | | D625 | 8-719-924-06 | DIODE ERC24-06S | |
| *4-374-844-01 | | HEAT SINK (SRT) | | D626 | 8-719-103-21 | DIODE RD20E-N2 | |
| *4-374-845-01 | | BAND (SRT) | | CONNECTOR | | | |
| *4-374-846-01 | | COVER, CAPACITOR, CAP TYPE | | FB1 | *1-508-765-00 | 3P PLUG (M) | |
| *4-374-846-11 | | COVER, CAPACITOR, CAP TYPE | | FB2 | *1-564-454-11 | PLUG, CONNECTOR (2.5MM) 6P | |
| CAPACITOR | | | | IC | | | |
| C606 | A 1-130-808-61 | FILM 0.22MF 10% 400V | | IC611 | 8-759-937-59 | IC MB3759 | |
| C607 | A 1-161-953-51 | CERAMIC 0.0047MF 20% 400V | | IC612 | 8-759-729-03 | IC NJM2903D | |
| C608 | A 1-161-742-51 | CERAMIC 0.0022MF 20% 400V | | COIL | | | |
| C609 | A 1-161-742-51 | CERAMIC 0.0022MF 20% 400V | | L611 | 1-408-412-00 | MICRO INDUCTOR 18UH | |
| C610 | A 1-161-742-51 | CERAMIC 0.0022MF 20% 400V | | L612 | 1-407-365-00 | COIL, CHOKE | |
| C611 | A 1-161-742-51 | CERAMIC 0.0022MF 20% 400V | | TRANSISTOR | | | |
| C612 | A 1-161-742-51 | CERAMIC 0.0022MF 20% 400V | | Q610 | 8-729-802-07 | TRANSISTOR 2SD1403-CA | |
| C613 | A 1-161-742-51 | CERAMIC 0.0022MF 20% 400V | | Q611 | 8-729-177-43 | TRANSISTOR 2SD774 | |
| C614 | 1-161-742-00 | CERAMIC 0.0022MF 20% 400V | | Q612 | 8-729-177-43 | TRANSISTOR 2SD774 | |
| C615 | A 1-161-742-51 | CERAMIC 0.0022MF 20% 400V | | Q613 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| C616 | 1-123-581-00 | ELECT 100MF 20% 400V | | Q614 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| C617 | 1-136-173-00 | FILM 0.47MF 5% 50V | | RESISTOR | | | |
| C618 | 1-123-356-00 | ELECT 10MF 20% 25V | | R611 | 1-206-676-00 | METAL OXIDE 3.3K 5% 2W F | |
| C619 | 1-108-587-00 | MYLAR 0.022MF 10% 50V | | R612 | 1-247-155-00 | CARBON 10K 5% 1/4W | |
| C620 | 1-161-328-00 | CERAMIC 0.0047MF 30% 50V | | R613 | 1-244-929-00 | CARBON 220K 5% 1/2W | |
| C621 | 1-123-356-00 | ELECT 10MF 20% 16V | | R614 | 1-247-807-00 | CARBON 100 5% 1/6W | |
| C622 | 1-124-440-11 | ELECT 3300MF 20% 25V | | R615 | 1-247-827-00 | CARBON 680 5% 1/6W | |
| C623 | 1-108-833-00 | MYLAR 0.0047MF 10% 50V | | R616 | 1-247-034-00 | CARBON 220 5% 1/8W F | |
| C624 | 1-123-356-00 | ELECT 10MF 20% 25V | | R617 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | |
| C625 | 1-106-180-00 | MYLAR 0.0022MF 10% 50V | | R618 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | |
| C626 | 1-102-074-00 | CERAMIC 0.001MF 10% 50V | | R619 | 1-247-865-00 | CARBON 27K 5% 1/6W | |
| C627 | 1-123-356-00 | ELECT 10MF 20% 16V | | R620 | 1-247-853-00 | CARBON 8.2K 5% 1/6W | |
| C628 | 1-123-356-00 | ELECT 10MF 20% 25V | | R621 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | |
| C629 | 1-123-381-00 | ELECT 2.2MF 20% 50V | | R622 | 1-249-421-11 | CARBON 2.2K 5% 1/6W | |
| C630 | 1-123-330-00 | ELECT 22MF 20% 16V | | R623 | 1-247-879-00 | CARBON 100K 5% 1/6W | |
| C631 | 1-123-335-00 | ELECT 330MF 20% 25V | | R624 | 1-249-421-11 | CARBON 2.2K 5% 1/6W | |
| C632 | 1-130-806-00 | FILM 0.1MF 10% 400V | | R625 | 1-213-135-00 | METAL OXIDE 220 5% 1W F | |
| C633 | 1-102-074-00 | CERAMIC 0.001MF 10% 50V | | R627 | 1-215-443-00 | METAL 8.2K 1% 1/6W | |
| DIODE | | | | R628 | 1-215-451-00 | METAL 18K 1% 1/6W | |
| D610 | 8-719-300-63 | DIODE LB-156 | | R629 | 1-215-447-00 | METAL 12K 1% 1/6W | |
| D611 | 8-719-924-06 | DIODE ERC24-06S | | R630 | 1-247-849-00 | CARBON 5.6K 5% 1/6W | |
| D612 | 8-719-102-74 | DIODE RD6.2E-N2 | | R631 | 1-247-849-00 | CARBON 5.6K 5% 1/6W | |
| D613 | 8-719-901-93 | DIODE V19E | | R632 | 1-215-429-00 | METAL 2.2K 1% 1/6W | |
| D614 | 8-719-911-19 | DIODE 1SS119 | | R633 | 1-215-401-11 | METAL 150 1% 1/6W | |
| D615 | 8-719-908-20 | DIODE ERC88-009 | | R634 | 1-215-429-00 | METAL 2.2K 1% 1/6W | |
| D616 | 8-719-102-90 | DIODE RD10E-N2 | | R635 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| D617 | 8-719-102-74 | DIODE RD6.2E-N2 | | R636 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| D618 | 8-719-911-19 | DIODE 1SS119 | | R637 | 1-247-879-00 | CARBON 100K 5% 1/6W | |
| D619 | 8-729-101-31 | TRANSISTOR N13T1 | | R638 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | |
| D620 | 8-719-911-19 | DIODE 1SS119 | | R639 | 1-247-843-00 | CARBON 3.3K 5% 1/6W | |
| D621 | 8-719-911-19 | DIODE 1SS119 | | R640 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| D622 | 8-719-911-19 | DIODE 1SS119 | | | | | |
| D623 | 8-719-911-19 | DIODE 1SS119 | | | | | |

NOTE:

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

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| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark |
|---------------------------------|--------------|--------------------------------|--------|------------|---------------|------------------------------|--------|
| R641 | 1-249-421-11 | CARBON 2.2K 5% 1/6W | | C219 | 1-123-356-00 | ELECT 10MF 20% 25V | |
| R642 | 1-247-867-00 | CARBON 33K 5% 1/6W | | C220 | 1-123-356-00 | ELECT 10MF 20% 25V | |
| R643 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | | C221 | 1-101-006-21 | CERAMIC 0.047MF 50V | |
| R644 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | | C222 | 1-123-321-00 | ELECT 220MF 20% 16V | |
| R645 | 1-247-034-00 | CARBON 220 5% 1/8W | F | C223 | 1-123-321-00 | ELECT 220MF 20% 16V | |
| R646 | 1-247-825-00 | CARBON 560 5% 1/6W | | C224 | 1-123-333-00 | ELECT 100MF 20% 16V | |
| R647 | 1-205-636-11 | CEMENTED 3.3 5% 5W | F | C225 | 1-123-318-00 | ELECT 33MF 20% 16V | |
| R648 | 1-213-160-00 | METAL OXIDE 27K 5% 1W | F | C226 | 1-123-318-00 | ELECT 33MF 20% 16V | |
| R649 | 1-213-160-00 | METAL OXIDE 27K 5% 1W | F | C228 | 1-102-129-21 | CERAMIC 0.01MF 10% 50V | |
| R650 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | | C229 | 1-123-380-00 | ELECT 1MF 20% 50V | |
| R651 | 1-247-831-00 | CARBON 1K 5% 1/6W | | C230 | 1-102-824-00 | CERAMIC 470PF 5% 50V | |
| VARIABLE RESISTOR | | | | C231 | 1-101-004-00 | CERAMIC 0.01MF 50V | |
| RV610 | 1-230-231-11 | RES, ADJ, CERAMIC CARBON 2.2K | | C232 | 1-123-330-00 | ELECT 22MF 20% 25V | |
| RV611 | 1-230-230-00 | RES, ADJ, CERAMIC CARBON 1K | | C240 | 1-102-822-00 | CERAMIC 390PF 5% 50V | |
| RELAY | | | | DIODE | | | |
| RY610 | 1-515-559-11 | RELAY, POWER | | D201 | 8-719-100-65 | DIODE RD12E-B2 | |
| TRANSFORMER | | | | D202 | 8-719-911-19 | DIODE 1SS119 | |
| T609 | 1-421-760-11 | LFT | | D203 | 8-719-100-65 | DIODE RD12E-B2 | |
| T610 | 1-421-760-11 | LFT | | D204 | 8-719-911-19 | DIODE 1SS119 | |
| T611 | 1-448-146-11 | TRANSFORMER, CONVERTER (S.R.T) | | D205 | 8-719-911-19 | DIODE 1SS119 | |
| T612 | 1-437-173-11 | TRANSFORMER, DRIVE | | IC | | | |
| VARISTOR | | | | IC201 | 8-752-006-10 | IC CX20061 | |
| VDR610 | 1-807-181-11 | VARISTOR SNR-14A420K | | IC202 | 8-759-400-01 | IC AN5250 | |
| ***** | | | | CONNECTOR | | | |
| *A-1270-160-A Q BOARD, COMPLETE | | | | Q1 | *1-564-441-11 | PLUG, CONNECTOR (2.5MM) 5P | |
| ***** | | | | Q2 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P | |
| 4-308-030-00 WASHER | | | | Q3 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P | |
| CAPACITOR | | | | Q4 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P | |
| C201 | 1-123-333-00 | ELECT 100MF 20% 25V | | Q5 | 1-562-212-00 | CONNECTOR, DIN 6P | |
| C202 | 1-101-006-21 | CERAMIC 0.047MF 50V | | Q6 | 1-536-899-11 | TERMINAL BOARD, INPUT/OUTPUT | |
| C203 | 1-123-356-00 | ELECT 10MF 20% 25V | | TRANSISTOR | | | |
| C204 | 1-123-318-00 | ELECT 33MF 20% 16V | | Q201 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| C205 | 1-123-318-00 | ELECT 33MF 20% 16V | | Q202 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| C206 | 1-123-333-00 | ELECT 100MF 20% 25V | | Q203 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| C208 | 1-123-356-00 | ELECT 10MF 20% 25V | | Q204 | 8-729-204-83 | TRANSISTOR 2SA1048GR | |
| C209 | 1-123-318-00 | ELECT 33MF 20% 16V | | Q205 | 8-729-204-83 | TRANSISTOR 2SA1048GR | |
| C210 | 1-123-356-00 | ELECT 10MF 20% 25V | | Q206 | 8-729-177-43 | TRANSISTOR 2SD774 | |
| C211 | 1-101-006-21 | CERAMIC 0.047MF 50V | | Q207 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| C212 | 1-101-006-21 | CERAMIC 0.047MF 50V | | Q208 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| C213 | 1-123-380-00 | ELECT 1MF 20% 50V | | RESISTOR | | | |
| C214 | 1-123-380-00 | ELECT 1MF 20% 50V | | R201 | 1-215-394-00 | METAL 75 1% 1/6W | |
| C215 | 1-123-334-00 | ELECT 220MF 20% 25V | | R202 | 1-247-131-00 | CARBON 1K 5% 1/4W | |
| C217 | 1-101-006-21 | CERAMIC 0.047MF 50V | | R203 | 1-247-875-00 | CARBON 68K 5% 1/6W | |
| C218 | 1-123-382-00 | ELECT 3.3MF 20% 50V | | R204 | 1-247-873-00 | CARBON 56K 5% 1/6W | |
| | | | | R205 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| | | | | R206 | 1-247-807-00 | CARBON 100 5% 1/6W | |
| | | | | R207 | 1-247-875-00 | CARBON 68K 5% 1/6W | |
| | | | | R208 | 1-215-394-00 | METAL 75 1% 1/6W | |

NOTE:

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

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| Ref.No. | Part No. | Description | Remark |
|---------|--------------|-----------------------|--------|
| R209 | 1-247-131-00 | CARBON 1K 5% 1/4W | |
| R210 | 1-247-873-00 | CARBON 56K 5% 1/6W | |
| R211 | 1-247-807-00 | CARBON 100 5% 1/6W | |
| R212 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| R213 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| R214 | 1-247-799-00 | CARBON 47 5% 1/6W | |
| R215 | 1-247-849-00 | CARBON 5.6K 5% 1/6W | |
| R216 | 1-247-843-00 | CARBON 3.3K 5% 1/6W | |
| R217 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| R218 | 1-247-893-00 | CARBON 390K 5% 1/6W | |
| R219 | 1-247-889-00 | CARBON 270K 5% 1/6W | |
| R220 | 1-247-889-00 | CARBON 270K 5% 1/6W | |
| R221 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| R222 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| R223 | 1-247-893-00 | CARBON 390K 5% 1/6W | |
| R224 | 1-247-889-00 | CARBON 270K 5% 1/6W | |
| R225 | 1-247-889-00 | CARBON 270K 5% 1/6W | |
| R226 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| R227 | 1-249-421-11 | CARBON 2.2K 5% 1/6W | |
| R228 | 1-247-841-00 | CARBON 2.7K 5% 1/6W | |
| R229 | 1-247-799-00 | CARBON 47 5% 1/6W | |
| R230 | 1-246-981-00 | CARBON 4.7 5% 1/8W F | |
| R232 | 1-247-823-00 | CARBON 470 5% 1/6W | |
| R233 | 1-247-823-00 | CARBON 470 5% 1/6W | |
| R234 | 1-247-879-00 | CARBON 100K 5% 1/6W | |
| R235 | 1-247-807-00 | CARBON 100 5% 1/6W | |
| R236 | 1-247-849-00 | CARBON 5.6K 5% 1/6W | |
| R237 | 1-247-876-00 | CARBON 75K 5% 1/6W | |
| R238 | 1-247-849-00 | CARBON 5.6K 5% 1/6W | |
| R239 | 1-247-876-00 | CARBON 75K 5% 1/6W | |
| R240 | 1-212-851-00 | FUSIBLE 5.6 5% 1/4W F | |
| R241 | 1-247-831-00 | CARBON 1K 5% 1/6W | |
| R242 | 1-217-477-00 | FUSIBLE 4.7 5% 1W F | |
| SWITCH | | | |
| S1 | 1-553-725-00 | SWITCH, SLIDE | |
| S2 | 1-553-725-00 | SWITCH, SLIDE | |

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|---------------------------------|---------------|----------------------------|--|
| ***** | | | |
| *A-1330-584-A C BOARD, COMPLETE | | | |
| ***** | | | |
| 1-526-691-00 SOCKET, CRT | | | |
| CONNECTOR | | | |
| C1 | *1-564-442-11 | PLUG, CONNECTOR (2.5MM) 6P | |
| C2 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P | |
| C3 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P | |
| C4 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P | |
| CAPACITOR | | | |
| C701 | 1-102-223-00 | CERAMIC 0.0047MF 10% 2KV | |
| C703 | 1-102-050-00 | CERAMIC 0.01MF 500V | |

| Ref.No. | Part No. | Description | Remark |
|-------------------|--------------|---------------------------|--------|
| C704 | 1-123-933-00 | ELECT 10MF 20% 160V | |
| COIL | | | |
| L701 | 1-407-704-00 | MICRO INDUCTOR 82UH | |
| L702 | 1-407-709-00 | MICRO INDUCTOR 220UH | |
| NEON LAMP | | | |
| NE702 | 1-519-013-13 | DISCHARGE TUBE | |
| NE703 | 1-519-013-13 | DISCHARGE TUBE | |
| NE704 | 1-519-013-13 | DISCHARGE TUBE | |
| NL701 | 1-519-108-XX | LAMP, NEON ASSY | |
| TRANSISTOR | | | |
| Q701 | 8-729-326-11 | TRANSISTOR 2SC2611 | |
| Q702 | 8-729-326-11 | TRANSISTOR 2SC2611 | |
| Q703 | 8-729-326-11 | TRANSISTOR 2SC2611 | |
| RESISTOR | | | |
| R701 | 1-202-842-11 | SOLID 220K 10% 1/2W | |
| R702 | 1-202-719-00 | SOLID 1M 10% 1/2W | |
| R703 | 1-202-838-00 | SOLID 100K 10% 1/2W | |
| R706 | 1-213-156-00 | METAL OXIDE 12K 5% 1W F | |
| R707 | 1-247-815-00 | CARBON 220 5% 1/6W | |
| R709 | 1-202-822-00 | SOLID 2.2K 10% 1/2W | |
| R710 | 1-213-156-00 | METAL OXIDE 12K 5% 1W F | |
| R711 | 1-202-822-00 | SOLID 2.2K 10% 1/2W | |
| R712 | 1-247-815-00 | CARBON 220 5% 1/6W | |
| R714 | 1-213-156-00 | METAL OXIDE 12K 5% 1W F | |
| R715 | 1-202-822-00 | SOLID 2.2K 10% 1/2W | |
| R716 | 1-247-815-00 | CARBON 220 5% 1/6W | |
| VARIABLE RESISTOR | | | |
| RV701 | 1-230-164-21 | RES, ADJ, METAL GLAZE 55M | |
| SPARK GAP | | | |
| SG701 | 1-519-063-XX | DISCHARGING GAP | |

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|------------------------|--------------|----------------------|--|
| ***** | | | |
| *1-614-498-11 DC BOARD | | | |
| ***** | | | |
| CAPACITOR | | | |
| C890 | 1-123-332-00 | ELECT 47MF 20% 16V | |
| C891 | 1-130-794-00 | FILM 0.22MF 10% 250V | |
| C892 | 1-130-800-00 | FILM 2.2MF 10% 250V | |
| DIODE | | | |
| D890 | 8-719-102-74 | DIODE RD6.2E-N2 | |
| D891 | 8-719-000-28 | THYRISTOR CRO2AM-8 | |
| D892 | 8-719-911-55 | DIODE U05G | |

DC

DD

DB

DA

| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark |
|--------------------|---------------|-----------------------------|--------|--------------|--------------|--------------------------|--------|
| <u>CONNECTOR</u> | | | | | | | |
| DC1 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P | | C807 | 1-123-356-00 | ELECT 10MF 20% 16V | |
| DC2 | *1-560-278-00 | PLUG, CONNECTOR 3P | | C808 | 1-123-382-00 | ELECT 3.3MF 20% 50V | |
| <u>TRANSISTOR</u> | | | | C809 | 1-123-380-00 | ELECT 1MF 20% 50V | |
| Q890 | 8-765-620-00 | TRANSISTOR 2SD1015 | | C810 | 1-161-059-00 | CERAMIC 0.047MF 10% 50V | |
| <u>RESISTOR</u> | | | | C811 | 1-102-121-00 | CERAMIC 0.0022MF 10% 50V | |
| R895 | 1-202-846-00 | SOLID 470K 1/2W | | C812 | 1-123-380-00 | ELECT 1MF 20% 50V | |
| R896 | 1-247-871-00 | CARBON 47K 5% 1/6W | | C813 | 1-123-356-00 | ELECT 10MF 20% 16V | |
| R898 | 1-247-817-00 | CARBON 270 5% 1/6W | | C814 | 1-124-539-51 | ELECT 330MF 20% 35V | |
| R899 | 1-247-839-00 | CARBON 2.2K 5% 1/8W F | | C815 | 1-129-706-51 | FILM 0.0022MF 10% 630V | |
| R900 | 1-246-517-25 | CARBON 68K 5% 1/4W | | C816 | 1-130-581-11 | FILM 0.033MF 3% 600V | |
| ***** | | | | C817 | 1-129-706-51 | FILM 0.0022MF 10% 630V | |
| | *1-615-160-11 | DD BOARD | | C820 | 1-123-335-00 | ELECT 330MF 20% 25V | |
| | | ***** | | C822 | 1-102-030-00 | CERAMIC 330PF 10% 500V | |
| | *1-564-451-11 | PLUG, CONNECTOR (2.5MM) 3P | | C823 | 1-123-347-00 | ELECT 330MF 20% 35V | |
| <u>CAPACITOR</u> | | | | C824 | 1-102-030-51 | CERAMIC 330PF 10% 500V | |
| C870 | 1-161-328-00 | CERAMIC 0.0047MF 30% 50V | | C825 | 1-123-933-00 | ELECT 10MF 20% 160V | |
| <u>IC</u> | | | | C826 | 1-123-356-00 | ELECT 10MF 20% 25V | |
| IC805 | 8-759-170-12 | IC UPC78M12H | | C828 | 1-130-781-00 | FILM 0.22MF 10% 100V | |
| ***** | | | | C830 | 1-123-356-00 | ELECT 10MF 20% 16V | |
| | *1-614-502-11 | DB BOARD | | C831 | 1-108-591-00 | MYLAR 0.033MF 10% 50V | |
| | | ***** | | C832 | 1-108-591-00 | MYLAR 0.033MF 10% 50V | |
| <u>CONNECTOR</u> | | | | C833 | 1-123-380-00 | ELECT 1MF 20% 50V | |
| DB1 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P | | C834 | 1-136-173-00 | FILM 0.47MF 5% 50V | |
| DB2 | *1-564-445-11 | PLUG, CONNECTOR (2.5MM) 9P | | C835 | 1-123-322-00 | ELECT 330MF 20% 16V | |
| <u>TRANSFORMER</u> | | | | C836 | 1-124-245-00 | ELECT 4.7MF 20% 25V | |
| T801 | 1-439-358-11 | TRANSFORMER ASSY, FLYBACK | | C837 | 1-123-379-00 | ELECT 0.47MF 20% 50V | |
| ***** | | | | C838 | 1-108-837-00 | MYLAR 0.01MF 10% 50V | |
| | *A-1345-522-A | DA BOARD, COMPLETE | | C839 | 1-108-845-00 | MYLAR 0.047MF 10% 50V | |
| | | ***** | | C840 | 1-102-832-00 | CERAMIC 330PF 10% 50V | |
| | 3-701-833-01 | HEAD, WASHER, TAPPING SCREW | | C841 | 1-123-360-00 | ELECT 100MF 20% 50V | |
| <u>CAPACITOR</u> | | | | C842 | 1-123-335-00 | ELECT 330MF 20% 25V | |
| C800 | 1-123-380-00 | ELECT 1MF 20% 50V | | C843 | 1-108-837-00 | MYLAR 0.01MF 10% 50V | |
| C801 | 1-108-599-00 | MYLAR 0.068MF 10% 50V | | C844 | 1-102-030-51 | CERAMIC 330PF 10% 500V | |
| C802 | 1-108-837-00 | MYLAR 0.01MF 10% 50V | | C845 | 1-136-337-11 | FILM 3.3MF 10% 100V | |
| C803 | 1-108-837-00 | MYLAR 0.01MF 10% 50V | | C846 | 1-124-245-00 | ELECT 4.7MF 20% 25V | |
| C804 | 1-123-369-00 | ELECT 4.7MF 20% 25V | | C850 | 1-123-356-00 | ELECT 10MF 20% 25V | |
| C805 | 1-123-369-00 | ELECT 4.7MF 20% 25V | | C851 | 1-106-176-00 | MYLAR 0.0015MF 5% 50V | |
| C806 | 1-130-868-00 | FILM 0.0056MF 5% 50V | | C853 | 1-106-180-00 | MYLAR 0.0022MF 5% 50V | |
| | | | | C854 | 1-102-529-00 | CERAMIC 100PF 5% 50V | |
| | | | | C855 | 1-123-356-00 | ELECT 10MF 20% 16V | |
| | | | | C856 | 1-102-973-00 | CERAMIC 100PF 10% 50V | |
| | | | | C857 | 1-102-038-51 | CERAMIC 0.001MF 500V | |
| | | | | C860 | 1-123-381-00 | ELECT 2.2MF 20% 50V | |
| | | | | C862 | 1-102-074-00 | CERAMIC 0.001MF 10% 50V | |
| | | | | C863 | 1-123-380-00 | ELECT 1MF 20% 50V | |
| | | | | C864 | 1-124-537-51 | ELECT 1200MF 20% 35V | |
| | | | | C866 | 1-102-074-00 | CERAMIC 0.001MF 10% 50V | |
| | | | | C867 | 1-101-002-00 | CERAMIC 0.0022MF 50V | |
| | | | | <u>DIODE</u> | | | |
| | | | | D800 | 8-719-102-74 | DIODE RD6.2E-N2 | |
| | | | | D801 | 8-719-911-19 | DIODE 1SS119 | |
| | | | | D803 | 8-719-300-76 | DIODE RH1A | |

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

DA

| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark |
|------------------|---------------|----------------------------|--------|-------------------|---------------|----------------------|---------------|
| D804 | 8-719-300-76 | DIODE RH1A | | <u>TRANSISTOR</u> | | | |
| D805 | 8-719-901-95 | DIODE V19CSS | | Q800 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| D806 | 8-719-901-93 | DIODE V19E | | Q801 | 8-729-201-62 | TRANSISTOR 2SC2555 | |
| D807 | 8-719-901-93 | DIODE V19E | | | *4-363-404-00 | HOLDER, IC; Q801 | |
| D808 | 8-719-901-93 | DIODE V19E | | | 4-363-414-00 | SPACER, MICA; Q801 | |
| D809 | 8-719-911-55 | DIODE U05G | | Q802 | 8-729-201-XX | TRANSISTOR 2SC3075 | |
| D810 | 8-719-911-19 | DIODE 1SS119 | | Q803 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| D811 | 8-719-911-19 | DIODE 1SS119 | | Q804 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| D812 | 8-719-911-19 | DIODE 1SS119 | | Q805 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| D813 | 8-719-911-19 | DIODE 1SS119 | | Q806 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| D814 | 8-719-911-19 | DIODE 1SS119 | | Q807 | 8-729-204-83 | TRANSISTOR 2SA1048GR | |
| D815 | 8-719-911-19 | DIODE 1SS119 | | Q808 | 8-729-245-83 | TRANSISTOR 2SC2458 | |
| D816 | 8-719-901-83 | DIODE 1SS83 | | Q809 | 8-729-133-43 | TRANSISTOR 2SC2334-K | |
| D817 | 8-719-911-19 | DIODE 1SS119 | | <u>RESISTOR</u> | | | |
| D818 | 8-719-911-19 | DIODE 1SS119 | | R800 | 1-247-855-00 | CARBON | 10K 5% 1/6W |
| D819 | 8-719-911-19 | DIODE 1SS119 | | R801 | 1-247-850-00 | CARBON | 6.2K 5% 1/6W |
| D820 | 8-719-911-19 | DIODE 1SS119 | | R802 | 1-247-855-00 | CARBON | 10K 5% 1/6W |
| D821 | 8-719-102-74 | DIODE RD6.2E-N2 | | R803 | 1-247-877-00 | CARBON | 82K 5% 1/6W |
| D822 | 8-719-103-21 | DIODE RD20E-N2 | | R804 | 1-247-857-00 | CARBON | 12K 5% 1/6W |
| D823 | 8-719-911-19 | DIODE 1SS119 | | R805 | 1-247-831-00 | CARBON | 1K 5% 1/6W |
| D824 | 8-719-102-61 | DIODE RD4.3E-N1 | | R807 | 1-247-851-00 | CARBON | 6.8K 5% 1/6W |
| D825 | 8-719-000-28 | THYRISTOR CRO2AM-8 | | R808 | 1-247-851-00 | CARBON | 6.8K 5% 1/6W |
| D826 | 8-719-981-00 | DIODE ERC81-004 | | R809 | 1-247-827-00 | CARBON | 680 5% 1/6W |
| D827 | 8-719-981-00 | DIODE ERC81-004 | | R810 | 1-247-827-00 | CARBON | 680 5% 1/6W |
| <u>CONNECTOR</u> | | | | R811 | 1-247-827-00 | CARBON | 680 5% 1/6W |
| DA1 | *1-564-440-11 | PLUG, CONNECTOR (2.5MM) 4P | | R812 | 1-206-648-00 | METAL OXIDE | 220 5% 2W F |
| DA2 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P | | R813 | 1-212-360-00 | METAL OXIDE | 1 5% 1W F |
| DA3 | *1-564-443-11 | PLUG, CONNECTOR (2.5MM) 7P | | R815 | 1-247-851-00 | CARBON | 6.8K 5% 1/6W |
| DA4 | *1-564-353-00 | PLUG, CONNECTOR (2.5MM) 2P | | R816 | 1-247-855-00 | CARBON | 10K 5% 1/6W |
| DA5 | *1-508-765-00 | 3P PLUG (M) | | R818 | 1-247-855-00 | CARBON | 10K 5% 1/6W |
| DA6 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P | | R819 | 1-215-461-00 | METAL | 47K 1% 1/6W |
| DA7 | *1-564-445-11 | PLUG, CONNECTOR (2.5MM) 9P | | R820 | 1-215-449-00 | METAL | 15K 1% 1/6W |
| DA8 | *1-564-354-00 | PLUG, CONNECTOR (2.5MM) 3P | | R821 | 1-247-879-00 | CARBON | 100K 5% 1/6W |
| <u>IC</u> | | | | R822 | 1-213-143-00 | METAL OXIDE | 1K 5% 1W F |
| IC800 | 8-759-100-60 | IC UPC1377C | | R824 | 1-217-383-00 | FUSIBLE | 4.7 5% 1/4W F |
| IC801 | 8-759-113-78 | IC UPC1378H-L | | R825 | 1-210-859-00 | CARBON | 1.2 5% 1/8W F |
| IC802 | 8-759-145-58 | IC UPC4558C | | R826 | 1-215-445-00 | METAL | 10K 1% 1/6W |
| IC803 | 8-759-240-30 | IC TC4030BP | | R827 | 1-213-149-00 | METAL OXIDE | 3.3K 5% 1W F |
| IC804 | 8-759-345-38 | IC HD14538BP | | R828 | 1-213-149-00 | METAL OXIDE | 3.3K 5% 1W F |
| <u>COIL</u> | | | | R829 | 1-213-149-00 | METAL OXIDE | 3.3K 5% 1W F |
| L800 | 1-408-242-00 | MICRO INDUCTOR 10MMH | | R830 | 1-247-855-00 | CARBON | 10K 5% 1/6W |
| L802 | 1-408-403-00 | MICRO INDUCTOR 3.3UH | | R831 | 1-247-855-00 | CARBON | 10K 5% 1/6W |
| L803 | 1-459-370-11 | COIL, FERRITE (HLC) | | R832 | 1-247-851-00 | CARBON | 6.8K 5% 1/6W |
| L804 | 1-459-597-11 | COIL, VARIABLE | | R833 | 1-247-863-00 | CARBON | 22K 5% 1/6W |
| L805 | 1-459-403-00 | COIL (WITH CORE) | | R834 | 1-247-859-00 | CARBON | 15K 5% 1/6W |
| L806 | 1-408-423-00 | MICRO INDUCTOR 150UH | | R835 | 1-247-855-00 | CARBON | 10K 5% 1/6W |
| L807 | 1-459-595-11 | COIL, CHOKE | | R836 | 1-247-871-00 | CARBON | 47K 5% 1/6W |
| L810 | 1-407-365-00 | COIL, CHOKE | | R837 | 1-247-831-00 | CARBON | 1K 5% 1/6W |
| | | | | R838 | 1-247-824-00 | CARBON | 510 5% 1/6W |
| | | | | R839 | 1-247-852-00 | CARBON | 7.5K 5% 1/6W |
| | | | | R840 | 1-247-863-00 | CARBON | 22K 5% 1/6W |

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

DA HA

| Ref.No. | Part No. | Description | Remark | Ref.No. | Part No. | Description | Remark |
|---------------------|-------------------|------------------------------|--------|---------|--------------|----------------------------|----------------------------|
| R842 | 1-247-855-00 | CARBON 10K 5% 1/6W | | RV807 | 1-226-702-00 | RES, ADJ, METAL GLAZE 2.2K | |
| R843 | 1-247-865-00 | CARBON 27K 5% 1/6W | | RV808 | 1-226-703-00 | RES, ADJ, METAL GLAZE 10K | |
| R844 | 1-247-817-00 | CARBON 270 5% 1/6W | | | | RELAY | |
| R845 | 1-212-368-00 | METAL OXIDE 4.7 5% 1W | F | | | RY800 1-515-380-00 | RELAY |
| R846 | 1-213-138-00 | METAL OXIDE 390 5% 1W | F | | | TRANSFORMER | |
| R847 | 1-213-138-00 | METAL OXIDE 390 5% 1W | F | | | T800 A.1-437-082-11 | HOT |
| R848 | 1-213-139-00 | METAL OXIDE 470 5% 1W | F | | | T802 A.1-437-081-11 | TRANSFORMER, CDT |
| R849 | 1-247-848-00 | CARBON 5.1K 5% 1/6W | | | | ***** | |
| R850 | 1-247-855-00 | CARBON 10K 5% 1/6W | | | | *1-614-941-11 | HA BOARD |
| R851 | 1-247-855-00 | CARBON 10K 5% 1/6W | | | | ***** | |
| R852 | 1-247-819-00 | CARBON 330 5% 1/8W | F | | | CAPACITOR | |
| R853 | 1-247-831-00 | CARBON 1K 5% 1/6W | | | | C504 1-123-332-00 | ELECT 47MF 20% 25V |
| R855 | 1-215-434-00 | METAL 3.6K 1% 1/6W | | | | C505 1-101-004-00 | CERAMIC 0.01MF 50V |
| R856 A.1-215-455-31 | METAL 27K 1% 1/6W | | | | | DIODE | |
| R860 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | | | | D502 8-719-911-19 | DIODE 1SS119 |
| R861 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | | | | CONNECTOR | |
| R862 | 1-247-867-00 | CARBON 33K 5% 1/6W | | | | HA1 *1-564-451-11 | PLUG, CONNECTOR (2.5MM) 3P |
| R863 | 1-247-831-00 | CARBON 1K 5% 1/6W | | | | HA2 *1-564-452-11 | PLUG, CONNECTOR (2.5MM) 4P |
| R864 | 1-247-879-00 | CARBON 100K 5% 1/6W | | | | HA3 *1-564-451-11 | PLUG, CONNECTOR (2.5MM) 3P |
| R866 | 1-247-855-00 | CARBON 10K 5% 1/6W | | | | HA4 *1-564-451-11 | PLUG, CONNECTOR (2.5MM) 3P |
| R867 | 1-215-433-00 | METAL 3.3K 1% 1/6W | | | | HA5 *1-564-452-41 | PLUG, CONNECTOR (2.5MM) 4P |
| R868 | 1-247-871-00 | CARBON 47K 5% 1/6W | | | | HA6 *1-564-456-11 | PLUG, CONNECTOR (2.5MM) 8P |
| R869 | 1-247-871-00 | CARBON 47K 5% 1/6W | | | | HA7 *1-564-450-11 | PLUG, CONNECTOR (2.5MM) 2P |
| R870 | 1-215-469-00 | METAL 100K 1% 1/6W | | | | TRANSISTOR | |
| R871 | 1-247-895-00 | CARBON 470K 5% 1/6W | | | | Q502 8-729-245-83 | TRANSISTOR 2SC2458 |
| R872 | 1-247-889-00 | CARBON 270K 5% 1/6W | | | | Q503 8-729-245-83 | TRANSISTOR 2SC2458 |
| R873 | 1-247-831-00 | CARBON 1K 5% 1/6W | | | | RESISTOR | |
| R874 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | | | | R512 1-247-863-00 | CARBON 22K 5% 1/6W |
| R876 | 1-215-427-00 | METAL 1.8K 1% 1/6W | | | | R514 1-247-867-00 | CARBON 33K 5% 1/6W |
| R877 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | | | | R515 1-247-883-00 | CARBON 150K 5% 1/6W |
| R879 | 1-247-803-00 | CARBON 68 5% 1/6W | | | | R516 1-247-867-00 | CARBON 33K 5% 1/6W |
| R880 | 1-215-452-00 | METAL 20K 1% 1/6W | | | | R517 1-247-887-00 | CARBON 220K 5% 1/6W |
| R881 A.1-215-459-31 | METAL 39K 1% 1/6W | | | | | R518 1-247-867-00 | CARBON 33K 5% 1/6W |
| R882 | 1-215-441-00 | METAL 6.8K 1% 1/6W | | | | R519 1-247-873-00 | CARBON 56K 5% 1/6W |
| R883 | 1-247-863-00 | CARBON 22K 5% 1/6W | | | | R520 1-247-854-00 | CARBON 9.1K 5% 1/6W |
| R884 | 1-247-860-00 | CARBON 16K 5% 1/6W | | | | R521 1-249-421-11 | CARBON 2.2K 5% 1/6W |
| R885 | 1-247-852-00 | CARBON 7.5K 5% 1/6W | | | | R522 1-247-891-00 | CARBON 330K 5% 1/6W |
| R886 | 1-247-852-00 | CARBON 7.5K 5% 1/6W | | | | R523 1-247-831-00 | CARBON 1K 5% 1/6W |
| R888 | 1-247-847-00 | CARBON 4.7K 5% 1/6W | | | | R524 1-247-879-00 | CARBON 100K 5% 1/6W |
| R890 | 1-247-831-00 | CARBON 1K 5% 1/6W | | | | R525 1-247-871-00 | CARBON 47K 5% 1/6W |
| R891 | 1-247-851-00 | CARBON 6.8K 5% 1/6W | | | | R526 1-247-873-00 | CARBON 56K 5% 1/6W |
| R892 | 1-249-421-11 | CARBON 2.2K 5% 1/6W | | | | R527 1-247-881-00 | CARBON 120K 5% 1/6W |
| R893 | 1-247-837-00 | CARBON 1.8K 5% 1/8W | F | | | R528 1-247-878-00 | CARBON 91K 5% 1/6W |
| R894 | 1-247-807-00 | CARBON 100 5% 1/6W | | | | | |
| | | VARIABLE RESISTOR | | | | | |
| RV800 | 1-230-522-11 | RES, ADJ, METAL GLAZE 4.7K | | | | | |
| RV801 | 1-230-522-11 | RES, ADJ, METAL GLAZE 4.7K | | | | | |
| RV802 | 1-228-720-00 | RES, ADJ, CERAMIC CARBON 1K | | | | | |
| RV803 | 1-228-717-00 | RES, ADJ, CERAMIC CARBON 220 | | | | | |
| RV804 | 1-224-249-XX | RES, ADJ, METAL GLAZE 1K | | | | | |
| RV805 | 1-223-102-00 | RES, ADJ, WIREWOUND 120 | | | | | |
| RV806 | 1-228-727-00 | RES, ADJ, CERAMIC CARBON 47K | | | | | |

NOTE:

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

HA HB XA

| Ref.No. | Part No. | Description | Remark |
|--------------------------|--------------|----------------------------|--------|
| R529 | 1-247-855-00 | CARBON 10K 5% 1/6W | |
| R531 | 1-247-835-00 | CARBON 1.5K 5% 1/6W | |
| <u>VARIABLE RESISTOR</u> | | | |
| RV511 | 1-230-760-11 | RES, VAR, CARBON 1K | |
| RV512 | 1-230-762-11 | RES, VAR, CARBON 20K | |
| RV513 | 1-230-711-11 | RES, VAR, CARBON 20K | |
| RV514 | 1-230-711-11 | RES, VAR, CARBON 20K | |
| RV515 | 1-230-710-11 | RES, VAR, CARBON 10K | |
| RV516 | 1-230-710-11 | RES, VAR, CARBON 10K | |
| RV517 | 1-226-703-00 | RES, ADJ, METAL GLAZE 10K | |
| RV518 | 1-230-522-11 | RES, ADJ, METAL GLAZE 4.7K | |
| RV519 | 1-226-774-00 | RES, ADJ, METAL GLAZE 47K | |

THERMISTOR

TH502 1-800-944-00 THERMISTOR TH-4700

*1-614-942-11 HB BOARD

*4-337-424-00 HOLDER (L), LED
*4-374-809-01 HOLDER (3 GANG), LED

DIODE

D503 8-719-812-31 DIODE TLR123
D504 8-719-812-32 DIODE TLY123
D505 8-719-812-32 DIODE TLY123
D506 8-719-812-32 DIODE TLY123
D507 8-719-812-32 DIODE TLY123

CONNECTOR

HB2 *1-564-450-11 PLUG, CONNECTOR (2.5MM) 2P

SWITCH

S505 1-554-118-00 SWITCH, PUSH (1 KEY)
S506 1-554-118-00 SWITCH, PUSH (1 KEY)
S507 1-554-118-00 SWITCH, PUSH (1 KEY)
S508 1-554-118-00 SWITCH, PUSH (1 KEY)
S509 1-554-118-00 SWITCH, PUSH (1 KEY)

*1-614-496-11 XA BOARD

*4-337-424-00 HOLDER (L), LED

DIODE

D680 8-719-812-33 DIODE TLG123A

| Ref.No. | Part No. | Description | Remark |
|------------------------|--------------------------------|-------------|--------|
| MISCELLANEOUS ***** | | | |
| A.1-451-265-11 | DEFLECTION YOKE (SY-167) | | |
| 1-452-032-00 | MAGNET, DISK; 10MM Ø | | |
| 1-452-094-00 | MAGNET, ROTATABLE DISK; 15MM Ø | | |
| 1-452-126-11 | MAGNET | | |
| 1-507-465-00 | JACK, POWER OUTSIDE | | |
| A.1-509-547-11 | 3P INLET | | |
| 1-543-171-00 | CORE, RING | | |
| L901 A.1-426-043-12 | COIL, DEGAUSSING | | |
| S901 A.1-570-201-11 | SWITCH, PUSH (AC POWER)(1 KEY) | | |
| S902 A.1-516-046-11 | SWITCH, SLIDE | | |
| SP901 1-502-509-00 | SPEAKER | | |
| V901 A.8-737-151-05 | CRT (A20JKU10X) | | |

ACCESSORIES AND PACKING MATERIALS

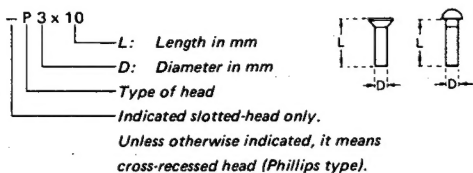
| Part No. | Description | Remark |
|----------------|------------------------|--------|
| A.1-551-258-11 | CORD, POWER | |
| 3-548-372-00 | BAG, POLYETHYLENE | |
| 3-701-630-00 | BAG, POLYETHYLENE | |
| 4-374-831-01 | HOOD (VF-501) | |
| 4-374-842-01 | INDIVIDUAL CARTON | |
| 4-374-848-01 | CUSHION (UPPER) (ASSY) | |
| 4-374-849-01 | CUSHION (LOWER) (ASSY) | |
| 4-482-062-11 | MANUAL, INSTRUCTION | |

NOTE:

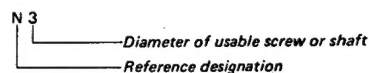
The components identified by shading and mark A are critical for safety. Replace only with part number specified.

HARDWARE NOMENCLATURE

Screw:



Nut, Washer, Retaining ring:



| Reference Designation | Shape | Description | Remarks |
|-----------------------|-------|---|--|
| SCREWS | | | |
| P | | pan-head screw | binding-head (B) screw for replacement |
| PWH | | pan-head screw with washer face | binding-head (B) screw and flat washer for replacement |
| PS PSP | | pan-head screw with spring washer | binding-head (B) screw and spring washer for replacement |
| PSW PSPW | | pan-head screw with spring and flat washers | binding-head (B) screw and spring and flat washers for replacement |
| R | | round-head screw | binding-head (B) screw for replacement |
| K | | flat-countersunk-head screw | |
| RK | | oval-countersunk-head screw | |
| B | | binding-head screw | |
| T | | truss-head screw | binding-head (B) screw for replacement |
| F | | flat-fillister-head screw | |
| RF | | fillister-head screw | |
| BV | | brazier-head screw | |

| Reference Designation | Shape | Description | Remarks |
|----------------------------|-------|--|---|
| SELF-TAPPING SCREWS | | | |
| TA | | self-tapping screw | ex: TA, P 3 x 10 |
| PTP | | pan-head self-tapping screw | binding-head self-tapping (TA, B) screw for replacement |
| PTPWH | | pan-head self-tapping screw with washer face | binding-head self-tapping (TA, B) screw and flat washer for replacement |
| PTTWH | | pan-head thread-rolling screw with washer face | binding-head (B) screw and flat washer for replacement |
| SET SCREWS | | | |
| SC | | set screw | |
| SC | | hexagon-socket set screw | ex: SC 2.6 x 4, hexagon socket |
| NUT | | | |
| N | | nut | |
| WASHERS | | | |
| W | | flat washer | |
| SW | | spring washer | |
| LW | | internal-tooth lock washer | ex: LW3, internal |
| LW | | external-tooth lock washer | ex: LW3, external |
| RETAINING RINGS | | | |
| E | | retaining ring | |
| G | | grip-type retaining ring | |

English
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